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The CANADIAN HOSPITAL

VOLUME 15
NUMBER 4

APRIL
1938

Official Journal

CANADIAN HOSPITAL COUNCIL

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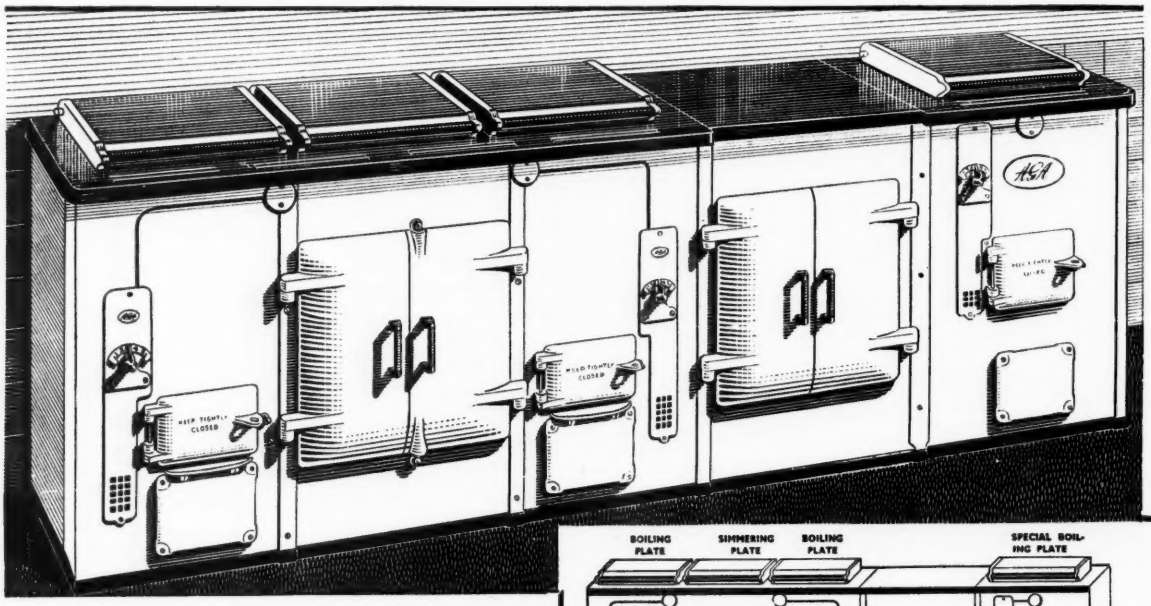

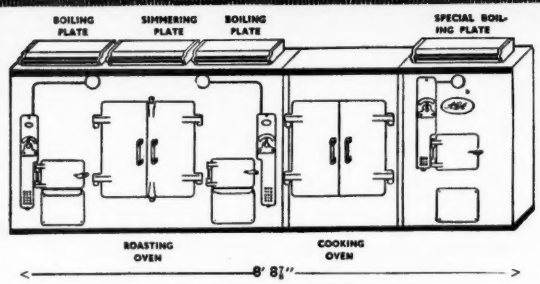

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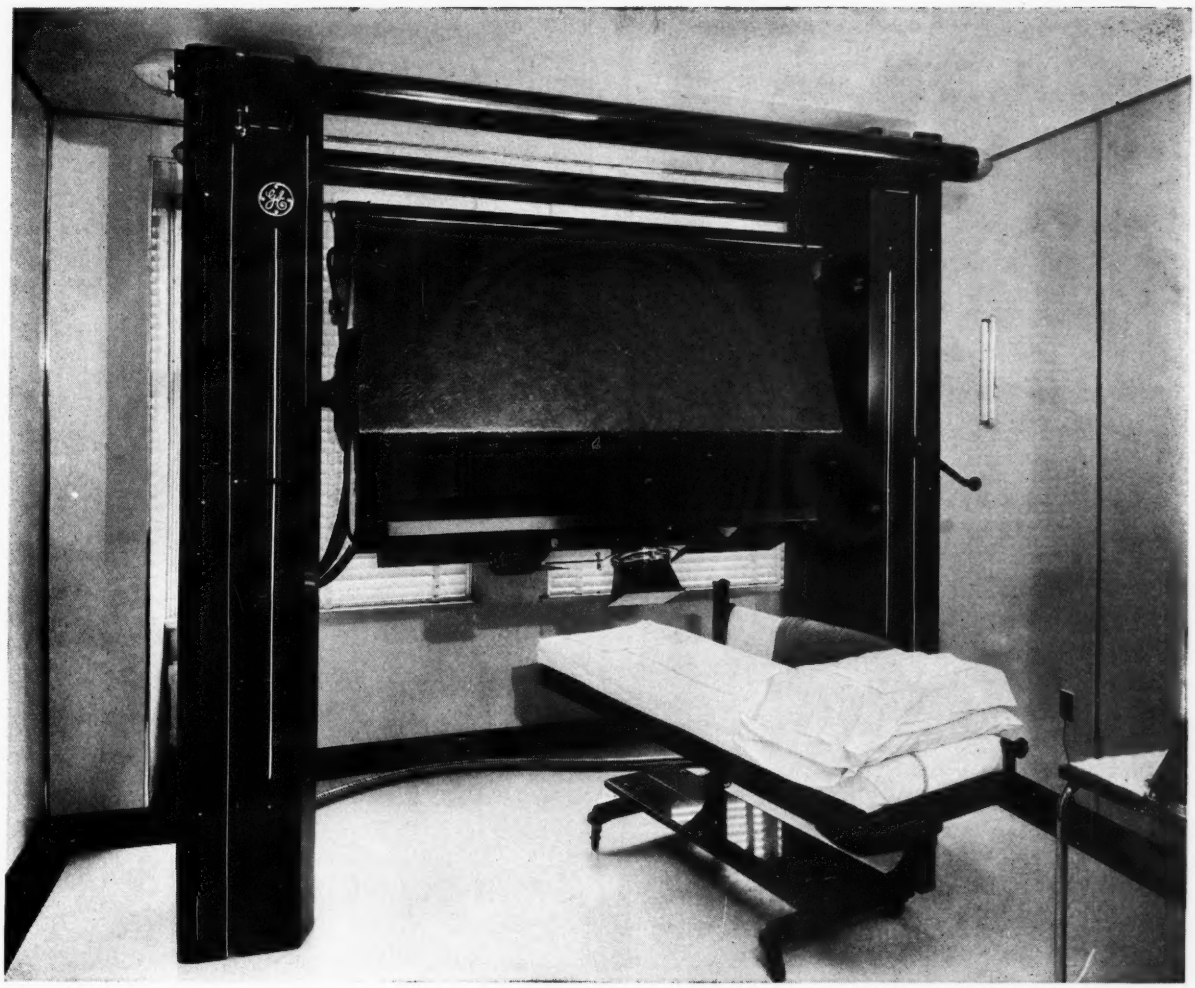

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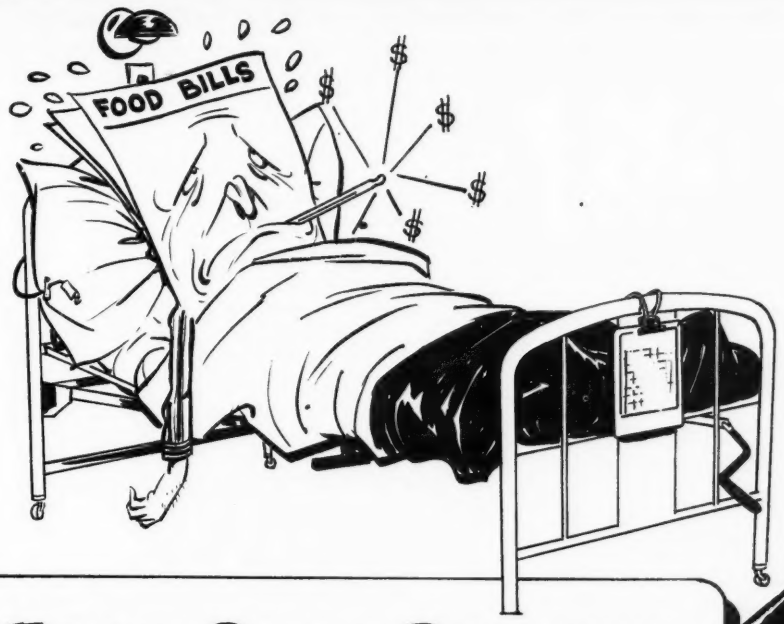

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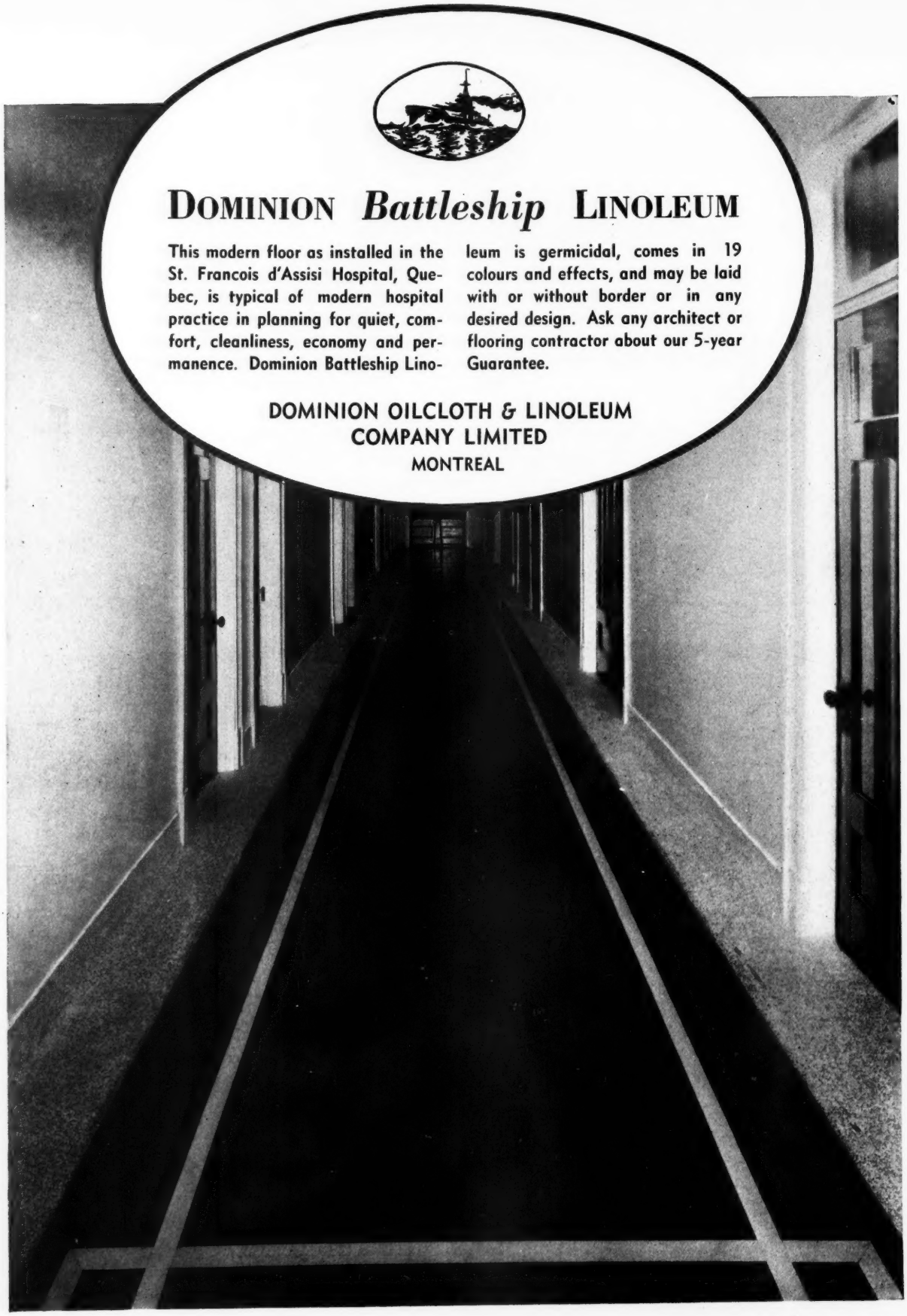
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CANNED FOODS AND THE PUBLIC HEALTH

III. Iron and Tin Salts

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The modern "sanitary style" can is manufactured from "tin plate". As the name implies, tin plate is made by plating or coating thin steel sheets with pure tin. This tin coating cannot be made absolutely continuous; under the microscope, minute areas can be noted in which the steel base is exposed.

Foods packed in plain or unenamelled cans are, therefore, exposed to iron and tin surfaces. In enamelled cans, foods are mainly in contact with inert lacquers baked onto the tin plate at high temperatures. However, because of minute abrasions in the enamel covering, unavoidably introduced during fabrication of the can, foods in enamelled cans may also have limited contacts with iron and tin surfaces.

It is common knowledge that canned foods may acquire small amounts of these metals from contact with their containers. The acquisition of iron and tin salts in this manner is an electrochemical phenomenon (1); and the amounts of these metallic salts thus acquired will depend, among other factors, upon the character of the food. In general, the acid foods tend to take up more of these metals; especially when air is admitted after the can is opened. However, the quantities of tin or iron present in canned foods, as a result of reaction with the container, are small; the analytical chemist reports these amounts in "parts per million".

As far as iron is concerned, it is commonly accepted that the amounts of this element—recognized as essential in human nutrition—which may be present in canned foods, are innocuous.

As to the tin salts which may be present in canned foods, the U.S. Department of Agriculture makes the following statement as the result of its investigation:

> "Our own experimental work, involving the ingestion of far larger amounts of tin than any previously reported, and supported by the experimental evidence of other investigators, leads us to the conclusion that tin, in the amounts ordinarily found in canned foods and in the quantity which would be ingested in the ordinary individual diet, is for all practical purposes, eliminated and is not productive of harmful effects to the consumer of canned foods." (2)

It may therefore be stated that the amounts of tin and iron salts normally present in commercially canned foods are without significance as far as possible hazard to consumer health is concerned.

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(1) Kohman and Sanborn, Ind. Eng. Chem. 20, 76, 1373 (1928); ibid, 22, 615 (1930).

(2) "Food-Borne Infections and Intoxications", F. W. Tanner, Twin City Pub. Co., Champaign, Ill., 1935, p. 90.

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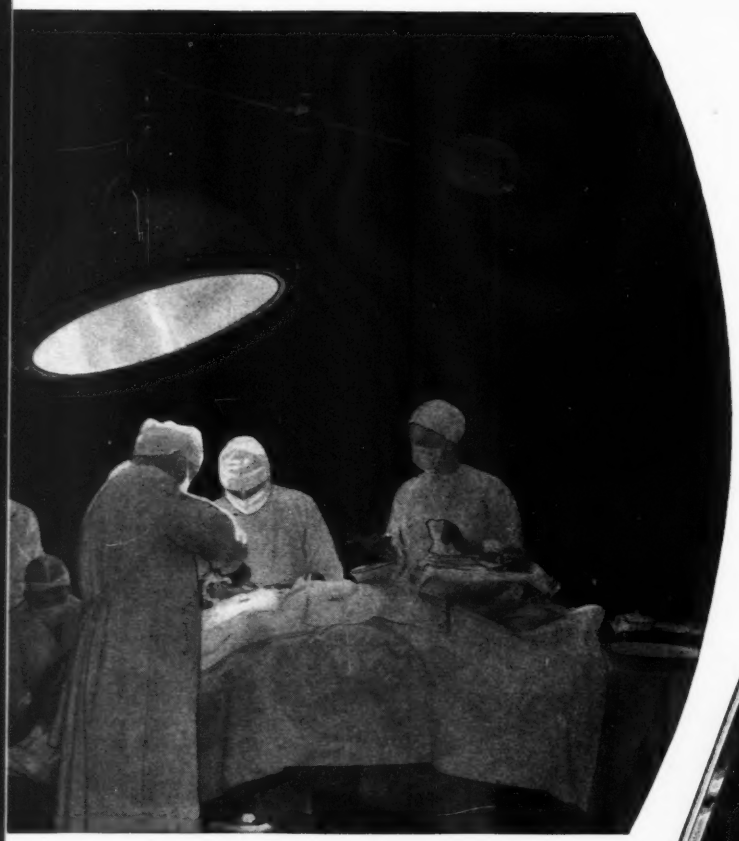

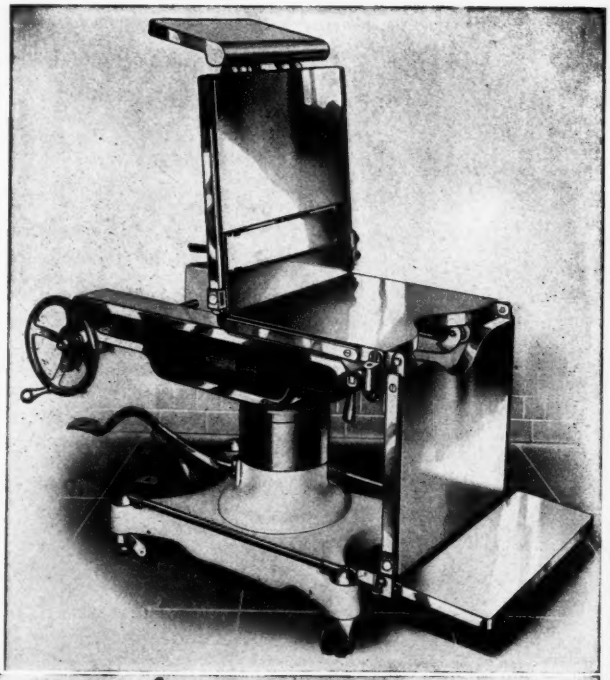

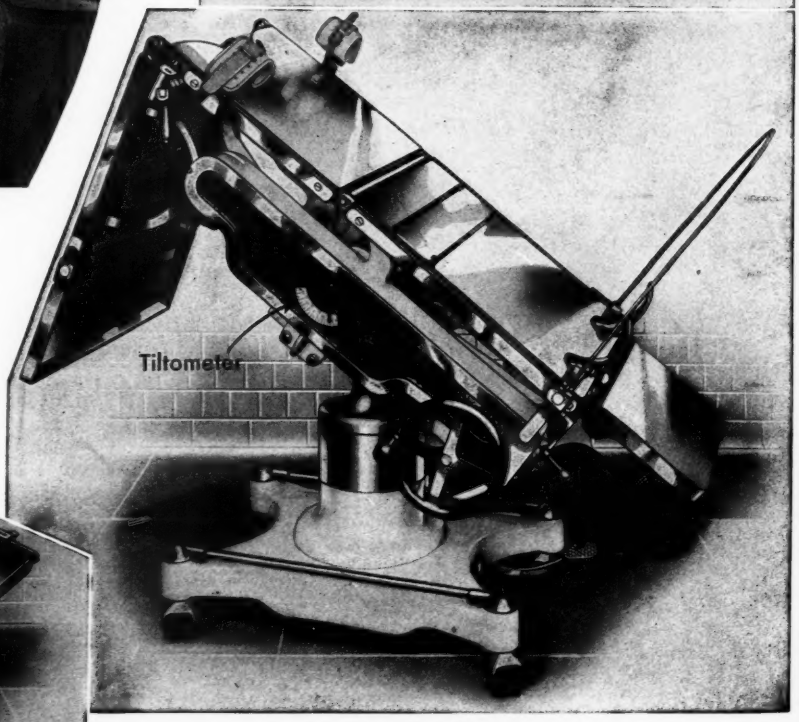

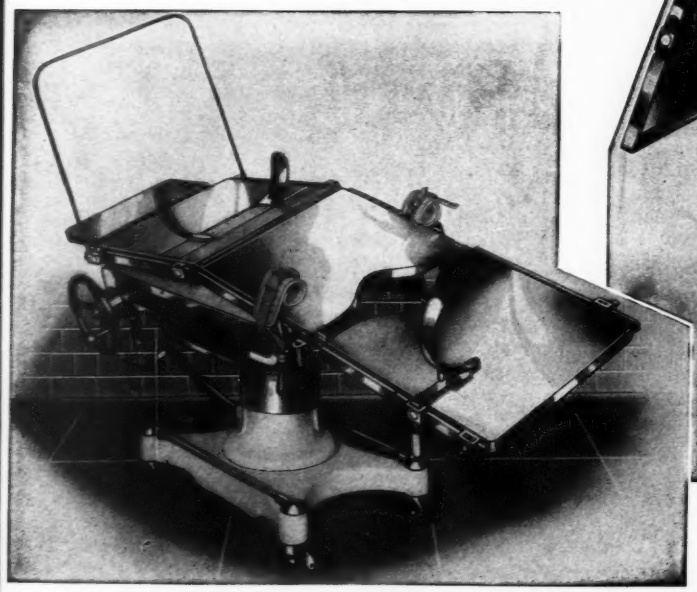

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The CANADIAN HOSPITAL

APRIL, 1938 Vol. 15 No. 4

ADDRESS ON POISONS AND FOODS

By I. M. RABINOWITCH, M.D., C.M., D.Sc., F.R.C.P.(C.), F.A.C.P.
Assistant Professor of Medicine and Lecturer in Biochemistry,
McGill University
Director, Department of Metabolism, The Montreal General Hospital

THIS is an era of poisons. If there is any doubt of this fact mortality and morbidity statistics soon dispel it. We hear and read much about the alarming number of deaths from motor-car accidents. According to the latest available data, the total number of such deaths in one year in the total registration area of the United States—primary automobile accidents, street car and automobile collisions and railroad and automobile collisions—was 36,023; whereas, during the same period of time, acute poisoning alone accounted for 8,201 deaths (1). These numbers, it should be noted, represent deaths and not cases and the vast majority of individuals with acute poisoning do not die immediately. In the Montreal General Hospital, for example, amongst the last 400 such cases, which included 43 different types of poisons, there were 32 deaths only—an incidence of 8 per cent. Even of the 30 cases of poisoning by bichloride of mercury there were six deaths only—an incidence of 20 per cent.

It seems that, as with conditions in general, the selection of poisons for purpose of suicide is changing. Compared with 1930, cyanides have increased in popularity; whereas, carbolic acid and bichloride of mercury have lost their attractiveness. Gas still seems to be the method of choice having accounted for about 45 per cent of all such deaths.

Chronic Poisoning

The number of cases of chronic poisoning is impossible to estimate, but it must be very large, in spite of the preventive measures of Public Health authorities. This statement is based upon the difficulties of detecting chronic poisoning in its early stages and the rapidly increasing use of potentially harmful materials in industries, clothes, cosmetics, patent medicines and therapeutic practices. Zangger (2), for example, has estimated that about 80 per cent of all cases are not recognized in medical practice. There are a number of reasons to believe that this high percentage does not apply generally, but there can hardly be any doubt that the percentage is high when consideration is given to the widespread use of these materials.

Industrial Poisoning

The list of poisons used in industries is a long one (3). It includes acids and alkalis; amongst the metals there are chromium, lead, mercury, arsenic, antimony, copper, zinc, phosphorus, vanadium, nickel, tellurium, selenium, tin, thallium, titanium, radium, etc.; there are benzene, toluene, xylene and a great variety of coal tar derivatives; there are the petroleum distillates, gasoline, benzine, etc., the chlorinated hydrocarbons, the alcohols, acetates and ketones; also carbon disulphide and a variety of asphyxiants (carbon monoxide, carbon dioxide, hydrocyanic acid, hydrogen sulphide, etc.). A fact of practical importance with regard to many of these substances is that the properties which make them valuable in industry also determine to a large extent their toxicity. The solvents are examples. The more volatile the solvent, the quicker it dries, but also the more intense is the contamination of the air to which the worker is exposed.

Judging from experiences with cases in which these poisons were detected, weakness is a common complaint and when such individuals are examined the usual picture is that of an anaemia. In some cases, there is albuminaria. With rest and treatment of the anaemia, there is generally improvement and the worker returns to his duties. Sooner or later, however, he again consults his physician with the same complaints. He is again treated, the health improves —probably more slowly than at first—and he again returns to work. When the illness again returns, some obscure condition is suspected. He is then admitted to a hospital for a more thorough investigation than is possible in office practice. Unless chronic poisoning is suspected and unless the hospital has the necessary equipment for the detection of minute amounts of these substances in body fluids (chemical, spectrographic, etc.) the fundamental disturb-

ance is again overlooked and the individual is discharged with some unsatisfactory diagnosis such as "cardio-vascular- renal disease with hypertension", the usual treatment for which is equally unsatisfactory.

That chronic poisoning from many of these substances may exist for some time without any complaints is clearly shown in the results of a number of investigations. In 1936, I was asked to test for the possibility of early poisoning in one of our industrial plants in which new processes were being developed and which included use of mercury, benzene and a combination of both. Though none of these workers had any complaints, the laboratory tests showed that of the 17 individuals exposed, 11 had signs of early poisoning—of the 9 exposed to mercury only, there were 4 cases; of the 7 exposed to benzene there were 6 cases and the one individual exposed to both mercury and benzene showed evidence of both forms of poisoning. This experience fits in with a number of more recent studies. In one investigation, for example (4) of 50 workers employed in manufacture of rainproof coats which required exposure to benzene, more than half showed early signs of poisoning. In another investigation (5) of the use of mercury in a fur industry, of 529 individuals examined, 43 were considered to have chronic mercurial poisoning. Chronic chromium poisoning has been known for a long time (3.6) and though there may be no great danger to life, the chronic irritations of the skin and mucous membranes are definite disabilities. One of the worst effects of this form of chronic poisoning is the "chrome hole"—progressive ulceration of the nasal septum terminating in perforation. A case was met with recently in this hospital. Recently there appeared a report in the Canadian Public Health Journal (7) of 15 cases of industrial cadmium poisoning including two deaths. In a report of the United States Public Health Service (8) it was shown that a variety of skin lesions are caused by noxious materials used in industries. The data fit in with the impression which is gaining ground amongst dermatologists that the majority of so-called eczemata are not due to deep-seated disturbances of metabolism but to external irritants. Shoe leather dermatitis (9) is the most recent addition to this list. These are a few only of the many examples which could be cited.

Contributed by

The Canadian Dietetic Association

Ruth Davidson Reid, B.A.
Montreal
Chairman
Publication Committee

Cosmetics

Analyses of cosmetics have shown ammoniated mercury in a beauty cream and paraphenylenediamine in a hair dye. Of two cases of eczema of obscure origin investigated in our laboratories, one was found to have been due to the latter dye. In a careful chemical investigation of a case of neuritis and nephritis, the cause was also found to have been a hair-dye, the chief constituent of which was bismuth. Lead acetate, silver nitrate, pyrogallic acid, paratoluylenediamine, resorcin and nitrobenzene have been found in hair restorers; arsenious oxide and resorcin in dandruff cures; sulphides in depilatories; mercury in a cream for freckles and as much as 40 per cent potassium chlorate in a well-known tooth paste. A recent addition seems to have been the use of sodium perborate in mouth washes, tooth pastes and tooth powders. The use of this poison apparently had its origin in its alleged efficiency in Vincent's infection. It has, as yet, to be shown definitely that this drug is effective in this disease. There is, however, no doubt that it can cause severe and painful chemical burns of the oral mucosa (10). Again, as with industrial poisoning, these are a few only of the many instances which could be cited.

Patent Medicines

Imagination seems to be at its best in manufacture of patent medicines. At least twenty-five of the widely-advertised headache "cures" contain acetanilide. "Tonics" contain arsenic, strychnine and nux vomica; there is potassium nitrate in "kidney" pills; thyroid and dinitrophenol in "obesity cures"; formaldehyde in "throat" tablets; chloroform in "cold" cures and, most treacherous of all, amidopyrine in "pain-killers." In spite of the definitely known fact that amidopyrine can cause fatal agranulocytosis, there are at least 25 preparations which are now known to contain this drug. A summary of the literature (11) showed that from May, 1933, to December, 1934, there were 128 cases of agranulocytosis from this drug and amongst them there were 70 deaths. From more recent records there is reason to believe that there are hundreds of such deaths every year. This condition, it should be noted, is recognized only by careful examination of the blood. There is, therefore, the probability that when a death occurs outside of hospitals the cause is attributed to some other condition, the signs of which are somewhat the same—sepsis, Vincent's angina, septic sore throat, multiple lung abscesses and even diphtheria.

Food Poisoning

It would be very gratifying to find that food is the exception to prove the rule, but this is not so. Mortality statistics show that, on this Continent at least, there are hundreds of such deaths every year; in the United States alone, food poisoning accounts for about 700 deaths every year (1). If the ratio of cases to deaths in the country as a whole is approximately the same as in our own experience, there are probably thousands of such cases every year since, as with acute poisoning in general, the majority of individuals recover; of the last 400 cases of poisoning seen in our hospital, there were 13 due to food and amongst them there was one death only.

From these few observations, it is obvious that the difficulty in the selection of subject-matter for this evening was not lack of material. To the end of January, 1938, for example, there were, in the United States alone, 27,525 Notices of Judgment under the Food and Drugs Act.

Ordinarily the term food poisoning refers to an acute gastro-enteritis caused by ingestion of food and drink which contain either living bacteria capable of setting up

acute inflammatory processes in the gastro-intestinal tract or toxins produced by these bacteria which have a similar irritant action. The Salmonella group of organisms is an example. This, however, is a restricted definition. Botulism, for example—a condition caused by the Bacillus botulinus—does not, as a rule, cause an acute gastro-enteritis but, like tetanus, is capable of producing a toxin which has a particularly damaging effect upon the nervous system. Within 12 hours after ingestion of food so infected, the general picture, as a rule, is not that of abdominal pain, vomiting or diarrhoea, but headache, dizziness, dilatation of the pupils, double vision, ptosis, paralysis of the lips, tongue, muscles of the throat and bowels and, finally, death from paralysis of the cardiac and respiratory centres. Trinchinosis—the disease caused by the Trichina spiralis—is another form of food poisoning which, though it may produce an acute gastro-enteritis, generally causes loss of appetite, malaise, weakness of the limbs and death may be due to paralysis of the muscles of respiration. This condition is much more common than is generally thought. In one of the recent United States Public Health Reports (12) it was shown that, of 1778 cadavers in 24 hospitals, the incidence was 12.5 per cent and not in one case was the condition detected during life, though in some the number of trichinae found were as high as about 1000 per gram of muscle. This form of poisoning, incidentally, is relatively simple to control; thorough cooking renders the parasite inert (13).

Food decomposed by putrefactive organism is not invariably toxic. This explains the apparent paradox of the harmless practice of eating ripened cheese and "high" game. There is, as yet, much to be known about bacterial food poisoning. An example is the outbreak in Connecticut in 1936 in which 18 orderlies and a ward-maid in a hospital became ill with diarrhoea and abdominal cramps. A most intensive study of the food and the personnel who served the food, failed to reveal the cause. All recovered within 48 hours and no cases developed subsequently (14).

Ptomaines and Canned Foods. A word may be said here of ptomaines. They undoubtedly exist and some are very toxic but, as far as food in normal amounts and normal tastes are concerned, their existence may be regarded as of academic interest only; they do not develop in appreciable quantities until putrefaction has advanced to such an extent that the food is no more palatable and is, therefore, not eaten. Our ideas of canned foods have also changed. Poisoning, when it does occur, is not due to permitting food to remain in an opened can, but to contamination of the food by its exposure to bacterial infection.

Other Food Poisons. Poisonous mushrooms may properly be included under food poisoning and there are also a number of freakish occurrences. Milk and cheese, for example, are occasionally rendered poisonous because of accidental occurrence of poisonous plants in cow pastures. Atropine poisoning may result from accidentally high concentrations of this poison in the flesh of rabbits. (Rabbits can live comfortably on belladonna, hyoscyamus and stramonium). Other such occurrences include out-breaks of potato poisoning due to accidentally high concentrations of the alkaloid solanine. In an outbreak in 1933 in which there were 60 cases and one death, the solanine content of the potatoes amounted to 9 mgms. per 100 grams of the tuber and 50 mgms. per 100 grams of the shoot (15). (Incidentally, it has been shown (16) that properly selected kaolin is an effective agent for this form of poisoning; its adsorptive capacity is about 5 mgms. of solanine alkaloid per gram of kaolin). Here, also, may be included the occurrence of poisons in fish at certain times of the year only—the Japanese Fugu distributed widely in the Eastern waters, and the barbed sturgeon in European waters are examples. Of seasonal occurrence also are the cases of mussel poisoning due apparently to seasonal occurrence of poisonous planktons in large numbers upon which the mussels feed. The outbreak in 1927 in San Francisco and the periodic occurrence of deaths since then are examples (17). Mussel poisoning confined to particular regions independent of season—as amongst the inhabitants of Tierra del Fuego—is another freak. Grains become infected at times with poisonous fungi. Ergotism is an example. Other freakish forms met with in European literature include corn-cockle in bread and coffee substitutes—probably due to a saponin—and the fly agaric which contains muscarine and probably other alkaloids also. Amongst the peculiar forms of food poisoning might also be included the hypersensitivity manifested by some people to substances to which people do not ordinarily react unfavourably—the so-called food allergies. There are a number of other conditions, but they are not the forms of food poisoning with which we are particularly concerned at present. The purpose here is to outline briefly some of the chemical compounds which find their way into foods accidentally or intentionally.

A freakish form of poisoning in this group was that which occurred in 1928. About 30 people became acutely ill after a dinner at a hotel in Utica. Investigation showed that the food had not deteriorated; that it had contained no preservatives and had not been contaminated otherwise. The cause was found in the powder used for cleaning the silverware; it contained over twenty per cent of sodium cyanide (18). Cyanides are, however, still finding their way into food materials and not always by accident. The Notices of Judgment which I have mentioned show that, as late as January of this year, hydrocyanic acid was discovered as a preservative three times in raisins (N.J.F.D. 27401, 27456 and 27525) and once in currants (N.J.F.D. 27463). As I shall presently show, there are, however, other poisons, which we may take, will continue to appear in food materials, since their use is not prohibited but merely controlled.

There seems to be an inconsistency in the practices of Public Health authorities with respect to food materials. Extreme care, for example, is taken to define milk and milk products; edible vegetable fats and oils; baking powder and baking powder materials and grain products; meat, meat products and meat by-products. Rigid rules are applied to fruits and fruit products; according to the Food and Drugs Regulations in Canada, for example, when on the label of the container it is stated that the contents consist of pure or genuine strawberry jam, the product must contain a minimum of 55 per cent strawberries; when a jam or marmalade is made of a mixture of fruits, it must contain a minimum of 12½ per cent of the most expensive fruit named on the label (19). Gov-

(Continued on page 30)

Comfort of Surgeons and Operating Room Personnel and/or Safety of Patients

By

JAMES GOVAN, M.R.A.I.C.,
of Govan, Ferguson and Lindsay,
Architects, Toronto

1. Can surgeons and other technicians in operating rooms maintain a high degree of efficiency in their work in a room temperature higher than 70 degrees and at not less than 56 per cent relative humidity, if adequate provision is not made for the radiation of body heat to nearby cold surfaces to supplement body cooling by evaporation and convection?

As a result of the recommendations of the Committee of the American Medical Association on "Anaesthesia accidents" (1), and also by the National Board of Fire Underwriters (2) (3), the provision of expensive equipment to maintain air temperatures in operating rooms well over 70 deg. F. and relative humidity not less than 56 per cent has become quite common.

The cost of installing, operating and maintaining such equipment may be perfectly justifiable if the results obtained are satisfactory.

However, if the degree of satisfaction with results can be judged by the number of installations where this expensive equipment is either standing unused, or at most providing conditions in operating rooms that do not agree with the recommendations of the committees above mentioned, it is obvious to even a casual student of hospital economics that the justification of these high expenditures should be questioned.

Why are the recommendations of these important committees not being followed?

Cost may be a factor, but I believe the principal reason is that surgeons and other workers are so uncomfortable in air at the recommended high temperatures and humidities that they cannot do their best work for the length of time required for even one operation, let alone several in one day. When operating rooms are maintained at well over 70 degrees F., and there is additional heat input from lights, occupants and sometimes from nearby sterilizing equipment, the surface temperatures of the walls, ceiling, floor, furniture, etc., in the room are raised till they closely approximate the temperature of the skin under the clothing. Consequently, if the heat from the body cannot be dissipated by convection or by radiation to surrounding cold surfaces, it must be given off by evaporation. This condition is neither comfortable for human beings nor conducive to sustained skilful work performance.

2. Is a patent subjected to a greater risk from the explosion or anaesthetics when the humidity in the operating room is less than 56 per cent than he or she is when the surgeons and staff have to work under conditions that promote inefficiency?

If a surgeon or his helpers cannot do their best work under the conditions recommended, is the risk to the patient greater due to possible inefficiency on the part of the staff than it is if the recommended precautions against anaesthetic explosions are not adopted?

I am not qualified to answer that question, but if I were asked, as a patient, to choose between these two risks, I would immediately vote for making the surgeon and all workers in the room comfortable. My conversations with surgeons indicate that many feel the same way about this situation, and that may account for the non-use of a lot of very elaborate and expensive equipment.

3. What indications are there that provision can be made for the safety of all the occupants in an operating room together with body comfort?

Let me quote Sir Leonard Hill, London, England (4): "It is commonly said that it does not matter whether the body heat loss is more by radiation and less by convection, or vice versa, but that is not so."

"That the quality of the radiation used for artificial heating is of no importance is far from being the case. The longer infra-red rays from dull red and dark sources of heat do not penetrate but warm the surface of the skin, and thus give to the face a dry and taut feeling. On the other hand, shorter infra-red and red rays, which are given off in greater amount by bright sources, penetrate through the skin and excite flushing and transpiration of moisture, thus giving a pleasant feeling to the skin. Further, I have shown that the former rays acting on the skin, reflexly by way of the nerves, cause congestion and narrowing of the airways of the nose and lungs, while cool air, and in the case of many people bright sources of heat, have the contrary effect. A feeling of stuffiness is produced by congestion of the air sinuses of the nose. The stuffy effect of dull red and dark sources of heat must be set aside by a sufficiency of ventilation with *cool air.*"

"Radiant warmth is much more important in maintaining comfort than air temperature. To raise the air temperature and warm people by convection is quite wrong, and produces stuffy *enervating conditions.*"

"The effective temperature scale is one used widely in U.S.A. It takes into account humidity of the air as well as temperature and movement, but makes no allowance for radiant heat."

In the U.S.A. Dr. E. Vernon Hill, one of the outstanding authorities on the effect of air conditions on Comfort, Health and Disease, and a member of the advisory council of the American Society of Heating and Ventilating Engineers, speaking on this subject to the Western Michigan

Chapter of that Society in January this year (5) concluded that "radiant heat is the key to air comfort."

In a paper on "Cold Walls and their Relation to the Feeling of Warmth" (6) to the A.S.H.V.E., F. C. Houghton, the Director of the Research Laboratory of that Society, stated that "in the early studies by the laboratory and co-operating organizations covering the effect of atmospheric environment on man's feeling of warmth, the variable radiation factor was eliminated in order to simplify an already complicated problem", and that, "although there was no misunderstanding of the importance which radiation plays in the dissipation of body heat, there may have been some under-estimation of the degree to which heat loss by radiation may vary under different types of building construction and occupancy."

However, for our purpose in considering the operating room problem, the most significant contribution has just been made by Dr. C. A. Mills, Professor of Experimental Medicine, University of Cincinnati in a paper to the American Society of Heating and Ventilating Engineers on "Control of Body Heat Loss Through Radiant Means" (7) in which he describes results noted on human beings and white mice in 4 experimental rooms.

Our subject only requires our attention to the conditions and results in 2 of these rooms which he describes as follows: "In Room No. 1 (6 ft. x 6 ft. x 6½ ft. inside measurements) with inside walls and ceiling constructed with rigid insulating board, air temperatures were maintained at 89 to 92 deg. F. and relative humidity at 60 to 70 per cent."

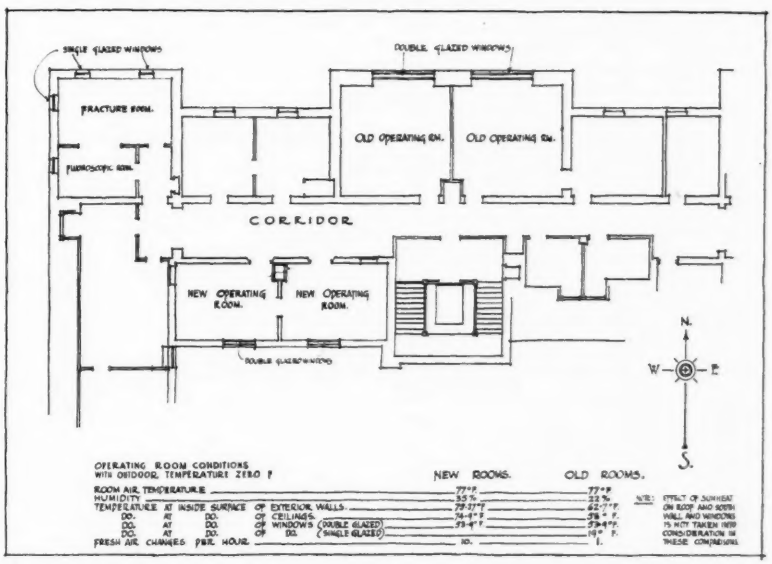
"Room No. 2 was similarly constructed, with air temperatures and humidity kept at the same level as in Room 1. However, it was lined throughout with aluminum foil glued to the wall board and contained six cold plates (20 in. by 42 in.) which were installed on two opposite side walls and connected to a condensing unit located outside the enclosure. These plates were kept at 32 deg. F. to 40 deg. F., and acted as absorbing surfaces for radiant heat liberated within the room. They were exposed to the air and naturally imposed a heavy load on the air conditioning equipment by their cooling and de-humidifying action. In both rooms, however, air conditions were satisfactorily maintained at the desired temperature and humidity levels, and with not over 2 deg. F. difference in air temperature at points one foot from the ceiling and one foot from the floor."

"Preliminary tests on human subjects indicated distinct discomfort in Room 1, with free perspiration and a smothering sensation. In Room 2, with identical conditions, the stuffiness and smothering sensation were lacking, and adequate body cooling took place. In fact for a person to sit there working several hours, it became necessary to cover over part of the cold plates to prevent actual body chilling. One of the subjects, in caring for the mice during that part of the study, found it necessary to wear a woollen sweater in this room, even at 89 to 92 F. air temperature and 60 to 70 per cent relative humidity."

"Human comfort for brief periods, however, is not a safe measure of environment effect. More general biologic effects after prolonged exposure must also be studied and taken into account. Accordingly, groups of healthy young white mice, which had been grown in the control room, were placed in the four test rooms. Every precaution was taken to have the four groups as similar as possible when placed in the rooms at three weeks of age. All were fed the same optimal diet which was used in previous work. Weekly weighings were made on each individual mouse to get the growth curve, and the age at onset of fertility was obtained by frequent matings with adults of known fertility as soon as the mating age was reached. Each group consisted of 10 males and 20 females."

"In the Table giving the results of these mouse observations, it is seen that fastest growth and earliest sexual development occurred in the group kept in Room 2; these animals developing even more rapidly than did those in Room 4 where best development had always previously prevailed. In Room 1 growth and development were suppressed by the moist heat, similarly as had been found in previous studies. Good health was maintained by the animals of all groups with not a single death during the four months of observation."

Plan of new and old operating rooms, with data on different surface temperatures, which affect body cooling by radiation.



The new rooms were specially built for summer conditions, for which they are better adapted than the old rooms, as the inside surface temperatures then are lower in the new than in the old rooms due to different construction methods.

Data given above explains why body cooling in winter zero weather in the new rooms is more adversely affected than in the old.

"Accompanying the growth stimulation in Room 2 there was an earlier onset of fertility and the birth of litters 1/5 larger in numbers than in Room 1, where growth suppression was accompanied by the birth of smaller litters of less viable young."

"Whether judged by human comfort or mouse growth standards, it is evident that in Room 2 the depressing effects of moist warmth have been completely obviated by facilitating loss of body heat by radiation. With air at 89 to 92 F.

(practically summer skin dry temperature) and relative humidity of around 65 per cent, heat loss by conduction and convection can only be slight, and only by free perspiration and rapid air movement can evaporation be effective. The finding that body comfort and optimal animal growth can be secured in such a room, below the perspiration point, means that removal of practically all body heat *through radiant channels* is physiologically possible and apparently quite desirable. The metabolic depression of Room 1, quite typical of tropical, moist heat conditions, can be completely overcome by facilitating radiant heat loss alone, without any change in air temperatures or humidity. Just why the air of Room 2 should be so much more pleasant to breathe than that of Room 1 is not at present explainable, since they are apparently identical. The effective factor may perhaps concern radiant heat loss from the nasal mucosa directly."

"In summary, these preliminary findings indicate certain important points: (1) Human comfort and animal growth and development can be regulated, with what seems apparent safety, by control of body heat loss through radiant channels alone; (2) Practical feasibility of such radiant control lies in the differences in radiant heat absorption and omission exhibited by various substances. Clothing materials rapidly radiate their heat to cold surfaces (if such be available) and fall to temperature levels well below those of surrounding hot air, thus encasing the body in a cooled capsule to which it can readily lose its internal heat. And in cold air, clothing readily absorbs radiant heat and forms a warm envelope around the body to slow the process of heat loss from the skin."

Dr. Mills concludes with the advice that "closest possible co-operation between engineers and physicists on the one hand, and medical and physiological scientists on the other, will be essential to the proper investigation of the possibilities residing in the conditioning scheme dealt with in this presentation of preliminary findings."

4. Is the removal of bacteria from the air in an operating room necessary or desirable?

This has been dealt with by Dr. Deryl Hart in an article on "Sterilization of the Air in the Operating Room by Bactericidal Radiant Energy" (8) and also by Dr. Elizabeth Chant Robertson in a paper "Air Contamination and Air Sterilization" (9). Both writers present evidence to show that bacteria found in the air in operating rooms can be removed almost entirely by the combined use of air conditioning apparatus and ultra-violet radiation.

As the first cost and operating expense of the bactericidal ultra-violet equipment is not very high, it would seem altogether likely that its use in operating rooms will be found to be justified as an additional safety measure. If that should be the case, its use will necessitate the closing of all possible air entrances to the room, other than those controlled by filtering apparatus.

5. What air temperature is desirable in an operating room?

This cannot be answered until it is decided whether it is necessary to remove all the air at least 8 times per hour, which is the minimum requirement laid down by the committees that have reported on safeguards against anaesthetic explosions.

If it is agreed that there is an explosion hazard due to the use of modern anaesthetics, then it would seem that a rapid flow of air in the vicinity of the patient is not only desirable but necessary, and therefore consideration must be given to the question as to what temperature of air can be moved rapidly over an open wound in a patient under operating conditions.

Presumably it is this consideration which has prompted the maintenance of operating room air at 80 degrees F., or even higher, rather than the 70 deg. F. level mentioned in the report of the committee of the American Medical Association (1).

Similarly any admission that there is an explosion hazard calls for relative humidity of the air of not less than 56 per cent according to the authorities at present accepted. (1) (2) (3).

Under these conditions of air anywhere near 80 F. and relative humidity of not less than 56 per cent, it is obvious that body cooling can only be accomplished by radiation to cold surfaces.

6. What effect on a patient has the transfer from a ward or room at a high temperature in summer into an operating room maintained artificially at a lower temperature, followed by the patient's transfer back again to the higher temperature of the ward or room?

7. What is the effect on operating room personnel of movement into and out of a room maintained both summer and winter at temperatures and humidities radically different from those in the other parts of a hospital?

I am not qualified to answer either questions 6 or 7. My studies, however, of the opinions of others, who are apparently well qualified to express themselves on this subject, indicate that excessive cooling of operating rooms in summer is likely to lead to complications that might be avoided if resort were had to facilitating body cooling by radiation to cold surfaces, rather than by lowering the air temperature in the room to a level in marked contrast to that in other parts of the institution.

At the Philadelphia meeting of the American Hospital Association, one hospital administrator reported that carefully kept records showed that, following the introduction of summer cooling in the operating department, sickness among the employees in that department was two and a half times greater than in any other department of the hospital, and that a similar disparity had not been noted before summer cooling was introduced.

This statement should not necessarily be taken as condemning the use of air conditioning equipment, but it does raise the question as to what is a safe difference between the air temperatures in the various rooms of a hospital, which have to be used intermittently, at comparatively short intervals, by either patients or staff. It is a certainty that no stage-by-stage transfer from a high to a low temperature, or vice versa, in a hospital is possible. The procedure followed in dealing with men working in compressed air is neither practically nor economically applicable in hospital administration.

8. If the rate of body cooling in operating rooms could be assisted, both summer and winter, by radiation so as to require less variation of the air temperature from other portions of the hospital, would conditions generally be improved.

Question No. 8 is answered by Dr. Mills (7) as pre-

viously quoted. His studies seem to point to a method of providing not only all the safeguards against the anaesthetic explosion hazard, but the equally essential comfort conditions, without which no surgeon or member of the operating room personnel can possibly do his or her best work.

I therefore suggest that The American College of Surgeons should take part in further investigation along the lines he has indicated, but may I add to his final recommendation that in doing so there might be included architects among the groups of professional men who should work on the problem, not because we might have something to contribute, but because we generally have to take all the blame when conditions in our hospitals do not meet with the approval of all those who have to live and work in the buildings we provide. Give us a chance, at least, to control conditions for which we may later have to take most of the responsibility.

(1) "The Hazard of Explosion of Anaesthetics", The Journal of the American Medical Association, Vol. 94, January to June, 1930, page 1491.

(2) "Recommended Safeguards," 1929. National Board of Fire Underwriters.

(3) "Safeguarding the Operating Room Against Explosions." Victor B. Phillips, The Modern Hospital, April and May, 1936.

(4) "Air Conditioning" by Sir Leonard Hill, "The Engineer", Jan. 15th, 1936, London, England.

(5) Heating, Piping and Air Conditioning, February, 1938, page 157.

(6) Heating, Piping and Air Conditioning, January, 1933.

(7) Heating, Piping and Air Conditioning, November, 1937.

(8) "Sterilization of the Air in the Operating Room by Bactericidal Radiant Energy", Dr. Deryl Hart—Surgery, Vol. 1, January to June, 1937, page 770.

(9) "Air Contamination and Air Sterilization", Paper at meeting of Bio-chemical and Biophysical Society held at The Hospital for Sick Children, Toronto, January 19th, 1938.

Presented at American College of Surgeons Great Lakes Sectional Meeting at Toronto, March 23, 1938.

Canadian Hospital Council Executive Completes Heavy Agenda

THE midwinter meeting of the Executive Committee of the Canadian Hospital Council was held on March the 10th, 1938, in Toronto. The following were present: Rev. Father Georges Verrault, Ottawa (Chairman); Geo. F. Stephens, M.D., Winnipeg; Rev. H. G. Wright, Inverness; A. F. Anderson, M.D., Edmonton, and Harvey Agnew, M.D., Toronto. Mr. W. R. Chenoweth, Montreal, was absent on account of illness, and Doctor A. K. Haywood was unavoidably absent. Doctor F. W. Routley, Honorary Vice-President, attended part of the sessions by invitation.

An extensive Agenda, comprising over 40 items, was up for consideration; although the meeting began promptly in the morning, the agenda was not completed until a few minutes before midnight. If the work of the Council continues to grow at the present rate, it will be necessary to hold two days of sessions for the next Executive Meeting.

Among the items discussed, the following will be of general interest.

The Canadian Hospital

The report of the Editor indicated considerable progress in the development of this journal. The Canadian Hospital Council will probably receive, at the end of the fiscal year, a cheque for several hundred dollars, as the Council's share in the operation of the journal. It was decided to set aside a portion of this amount for a fund to be ultimately utilized in the purchase of the journal, as previously agreed upon, and a portion to be utilized for extra pages of news material and to otherwise build up the journal. Various details in connection with the set-up and contributions were considered.

The resignation of Mr. Leonard Shaw, as Editor, in view of his appointment that week as Assistant Secretary of the American Hospital Association was anticipated, and action taken accordingly. A letter of regret and of congratulation was authorized. It was agreed that Doctor Harvey Agnew should take over the editorship of the journal. It was stipulated by the Secretary that he would do so only until such time as the services of a suitable editor could be obtained.

Brief to the Royal Commission on Dominion-Provincial Relations

The Brief of the Canadian Hospital Council was formally approved (previously approved by mail ballot).

Canadian Hospital Council Finance

The Report of the Revenue Committee was adopted. The replies from nearly all of the associations indicated an endeavour to meet the budget allotment for the support of the Council, as apportioned last Fall. The action of the Ontario Hospital Association, in voting $2,000 as a contribution for 1938, was heartily commended. It was agreed that a deputation be sent to the Federal Government to request financial support from the Government for the work of the Council.

National Research Council

The role of the representatives of the Council to the National Research Committee on National Building Codes was considered. The selection of representatives was approved.

American Hospital Association

After consideration of the revised fees of the American Hospital Association, it was agreed that the revised fees

would appear to bear unduly on Canadian hospitals, which, in addition to their provincial association, contribute to the support of the Canadian Hospital Council. This is to be brought to the attention of the American Hospital Association.

International Hospital Association

Tentative arrangements for the meeting in September, 1939, were approved. Further arrangements were made with respect to the issuance of invitations to foreign governments.

Canadian Hospital Council 1939 Meeting

It was agreed that the Canadian Hospital Council Meeting in 1939 be held on September the 21st and 22nd, which dates fall during the meeting of the International Hospital Association, and prior to the convention of the American Hospital Association.

It was agreed that the hospital associations throughout Canada be urged to appoint their delegates and alternates for this 1939 meeting at their conventions this year.

Study Committees

The personnel of study committees was selected.

Government and Other Contracts

It was agreed that an extensive study of contracts be undertaken by the Council.

Sweepstakes

The Executive Committee confirmed the stand taken by the Council at its Winnipeg Meeting in 1933, namely, that the Canadian Hospital Council cannot support the principle of raising funds for the financial support of hospitals by means of sweepstakes.

Trust Fund Investments

Further study of this subject was authorized.

Dental Services

A study of dental services in hospitals with the co-operation of dental organizations was authorized.

Correspondence

Various items of correspondence, dealing with tariff, legislation, freight rates and other hospital problems were reviewed.

Successful A.C.S. Sectional Meeting in Toronto March 22-24

IN the opinion of Dr. M. T. MacEachern and a host of visitors, the Great Lake Sectional Meeting of the American College of Surgeons was perhaps the most successful of all of the regional meetings of this body. Over 700 delegates were present from Michigan, New York, Ohio, Pennsylvania, Quebec and Ontario.

As usual, there were both surgical sessions and hospital conferences. The keynote of the hospital conferences was the care and the welfare of the patient and those present profited by some of the most valuable discussions which have taken place in a hospital meeting for many years. One session was devoted to the discussion of small hospital problems, the subject being opened by Dr. F. W. Routley and finally closed after several interesting papers by an inimitable and eloquent summary by Dr. John Ferguson. One entire session was devoted to a panel roundtable on a series of administrative, professional and economic problems.

"Your and My Medical Records Problems and How to Solve Them" was a successful conversation presentation conducted by Miss Vera Dale, Toronto, Registrar, Ontario Association of Record Librarians, with the help of a team of record librarians. Department heads of the Brantford General Hospital, under the leadership of Miss Muriel McKee, gave one a "peep behind the scenes" to see the problems of a typical hospital as presented in an Administrative Conference. The demonstration amply proved that,

"It ain't the individual, nor the army as a whole,
But the everlastin' teamwork of every bloomin' soul!"

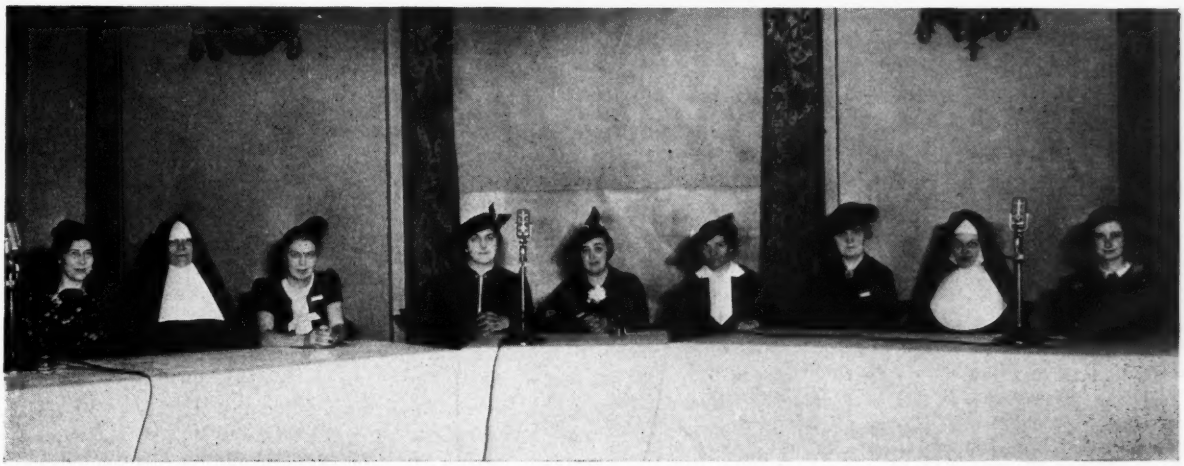
The care of the obstetrical patient and the cancer patient in the general hospital was discussed by Dr. John R. Fraser of Montreal and Dr. Frank E. Adair of New York. One morning was devoted to a panel discussion on the education and training of hospital executives, and various views on training for administration were given by Mr. James A. Hamilton of Cleveland, Dr. Basil C. MacLean of New York, Mr. T. T. Murray of Albany, and others. The evening roundtable was the usual success and the community health meeting, which wound up the congress was a pronounced success. The visiting and local surgeons enjoyed immensely the excellent clinics provided in the various city hospitals and the educational motion picture demonstrations.

The officers of the American College of Surgeons, the President Dr. F. A. Besley, the Chairman of the Board of Regents Dr. Geo. Crile, the Associate Directors Dr. M. T. MacEachern and Dr. Bowman Crowell, and the Local Committee under the chairmanship of Dr. W. E. Gallie, deserve hearty congratulation on this excellent meeting.

Hospital Obstetrical Care Under Fire

During the present session the criticism of maternity care in city hospitals by a medical member of the House of Commons was given wide press publicity. It was stated that "the maternity mortality in hospitals in such cities as Toronto has been very high . . . now the City of Toronto will not furnish a report of its maternity mortality; at any rate I have tried for the last three years to get it, and because of my habit of announcing what it is they refuse to give it." This was promptly denied by officials of the city named, it being pointed out that the figures are available at all times; the record for several years back was published with this statement. As a matter of fact, despite the influx of toxic and different cases, the maternal mortality rate for Toronto was actually *lower* last year than the rate for the province as a whole.

Ontario Medical Record Librarians Conduct Conversation Presentation at A.C.S. Meeting



Left to Right: E. Anne McLachlan, Canadian Hospital Council, Toronto; Sister Campion, Hotel Dieu, Kingston; Margaret Eberts, Toronto Western Hospital; Isobel Marshall, Brantford General Hospital, (President, O.A.R.L.); Vera Dale, Department of Hospital Service, C.M.A. Toronto, (Registrar, O.A.R.L.); Veronica Kelly, Hotel Dieu of St. Joseph Hospital, Windsor; A. Stella Hall, Toronto General Hospital; Sister Mary Paul, St. Michael's Hospital, Toronto; Margaret Weir, Ottawa Civic Hospital. (Lillian Johnstone, Hamilton General Hospital, Secretary O.A.R.L., could not remain for the photograph.)

Canadian Representatives in the House of Delegates of the American Hospital Association

Under the By-Laws of the American Hospital Association adopted at the Atlantic City Convention, provision was made for the establishment of a HOUSE OF DELEGATES to consist of "not more than 100 members." These 100 members will be composed as follows:

(1) 15 delegates chosen by the Assembly; five each year elected by the Assembly to serve for a period of three years. Fifteen were elected by the Assembly at the Atlantic City Convention, five to serve for one year, five to serve for two years, five to serve for three years.

(2) The members of the Board of Trustees and the Immediate Past-President of the Association, a total of 13.

(3) 72 members elected by the personal members of the American Hospital Association and the duly accredited representatives of the institutional members of the Association in each state of the United States, including Hawaii and the District of Columbia, and each province of Canada.

Under this arrangement, personal and institutional members of the American Hospital Association will be entitled to *one* representative from each province. In apportioning the 72 members among the provinces and states, certain of the states with larger membership were accorded more than one delegate. New York State has the highest membership in the American Hospital Association, and is given four delegates. Pennsylvania is second, and was given three. A few other states, Massachusetts, Ohio, Michigan, Illinois, California, New Jersey, Texas and Iowa have high membership, and receive two delegates each. All of the other states and each of the provinces are entitled to one.

These representatives are not to be named by the provincial or state association, but by the members of the American Hospital Association residing in their respective states and provinces. This is in accordance with the laws of Illinois, under which the Association is incorporated. Accordingly, the Secretary, Doctor Bert W. Caldwell, has named three members in each province to form a committee of the members in that province to name their representative. Correspondence on this selection is now taking place.

Two Canadians are already named to the House of Delegates, apart from the provincial selections; Doctor Geo. F. Stephens, of Winnipeg, was one of the fifteen delegates at large chosen by the Assembly at the Atlantic City Meeting last September, following the adoption of the new by-laws at that meeting; Doctor Harvey Agnew, of Toronto, is ex-officio a member of the House of Delegates as President-Elect and as a member of the Board of Trustees of the American Hospital Association.

The establishment of the House of Delegates, as a legislative body of the association is a distinct forward step, which has long been desired by those desirous of bringing the American Hospital Association still more closely into touch with the hospitals in the field. This House of Delegates now affords an opportunity for the voice of each state and province to be heard in its legislative discussions, and the result should be very beneficial. Conversely, the opportunity of having representatives from each state and province in close and sympathetic touch with the work of the association should be of tremendous benefit to the association itself, for this arrangement provides a fully qualified and informed liaison officer to carry back to the state and provincial associations the aims and policies of the national body.

Obiter Dicta

Leonard Shaw Leaves for Broader Field

ONCE again Canada has contributed an outstanding son to a broader field of usefulness. It is with deep regret, albeit such be tinged with pride, that The Canadian Hospital bids *au revoir* to its editor, Mr. Leonard Shaw, who has been called to assume the assistant secretaryship of the American Hospital Association. The committee on selection was most anxious that this keenly sought position go to one capable of efficiently discharging the increasingly heavy responsibilities of that office; that the honour should fall to our own Leonard Shaw would seem but obvious to his host of friends throughout this country and in England, the land of his birth.

Not the least factor in this choice was his successful editorship of *The Canadian Hospital*. In the two years since this publication became the official journal of the Canadian Hospital Council and Mr. Shaw assumed the editorship, we have seen many illustrations of his energy, ability and zealous enthusiasm. His editorials have been timely, tactful and forceful. It is not an easy task to edit a comparatively small magazine serving a scattered clientele and with but limited advertising resources. Undoubtedly this experience will stand Mr. Shaw in good stead in his larger constituency.

The best wishes of all of us go with you, Leonard. Fortunately, from your headquarters in Chicago, you will still be able to maintain close contact with the hospital field in Canada.

The New Editor

DR. HARVEY AGNEW has kindly consented to add to his already heavy duties the editorship of The Canadian Hospital.

The new Editor of The Canadian Hospital has visited almost every hospital in Canada, and has travelled extensively abroad. For a certain number of years, Dr. Agnew has been a Trustee of the American Hospital Association, of which he is now President-Elect. His contacts with the members of the medical profession, his scientific and artistic training, as well as a high degree of general culture make of him an ideal editor of a Hospital Journal.

It is, therefore, with a very great pleasure that we wish to welcome Dr. Agnew to his added function within the Council, and at the same time thank him for having accepted this new task.

* * *

Il nous fait plaisir d'annoncer la nomination du Docteur G. Harvey Agnew comme rédacteur en chef de notre revue "The Canadian Hospital."

Le Docteur Agnew n'est pas un nouveau venu parmi nous. Il fut un des animateurs de la fondation du Conseil Canadien des Hôpitaux et depuis le commencement, en est le secrétaire-trésorier.

Ceux qui ont eu la bonne fortune de l'entendre et de le voir à oeuvre, pendant les sessions biennales du Conseil n'ignorent pas les belles qualités qui le distinguent. Esprit vif et clair, souplesse et culture générale, connaissances techniques au sujet de tous les services hospitaliers, tels sont quelques-unes des caractéristiques qui se remarquent chez-lui, au cours de nos réunions. Une puissance et une persévérance extraordinaires au travail servent à merveille ses dispositions naturelles et l'acquit de ses nombreuses années d'étude.

A vingt-trois ans, il était déjà docteur en médecine, ayant gradué de l'Université de Toronto. Des études complémentaires en Autriche et plusieurs voyages en Europe l'ont mis en contact avec les maîtres de la science médicale et les administrateurs des grandes institutions hospitalières de plusieurs pays.

Le Docteur Agnew connaît tous les problèmes de nos hôpitaux. Il est particulièrement renseigné au sujet des divers projets d'assurances sociales d'hospitalisation. En raison de ses connaissances et de son expérience, il fut appelé à être un des fondateurs du Collège Américain des Administrateurs d'Hôpitaux. Il est président-élu, pour le terme 1938-1939 de l'Association Américaine des Hôpitaux.

Le Conseil Canadien des Hôpitaux est heureux de saluer le nouveau rédacteur de son organe officiel et de remercier e Docteur Agnew d'avoir bien voulu accepter cette tâche nouvelle, ajoutée à tant d'autres.

Georges Verreault, O.M.I.,
President.

Unpasteurized Milk Banned in New Legislation

THE use of unpasteurized milk has been subject to increasing criticism by health authorities during the past few years and, with the passage of controlling legislation by one of the provincial legislatures this spring, it would appear that another milestone has been reached in health legislation. The Ontario Government has introduced as a government measure a bill to make pasteurization compulsory in all cities and towns and providing authority to insist upon pasteurization elsewhere when indicated. Easy passage is anticipated, as it passed committee stage unanimously and the main criticism has been that the bill does not go far enough.

The apathy of the public with respect to the value of pasteurization is almost inconceivable. At the Canadian Public Health Association meeting last year the Committee on Milk Control revealed that only 45 municipalities in the whole of Canada required that all milk be pasteurized. A number of our largest cities are not on this list. Of the 33 cities with over 20,000 population only Toronto, Hamilton, Windsor, Saskatoon, St. Catharines and Oshawa could report 100 per cent of the milk as being pasteurized. However, it is only fair to add that Montreal, Ottawa, Verdun (Que.), Regina, Kitchener, Brantford and Westmount reported 95 or over per cent pasteurized. As the great majority of our hospitals are in areas without pasteurization regulations, it is a fair assumption that *the great majority of our hospitals use unpasteurized milk.* Administrators of hospitals with fairly large, and in one case quite large, paediatric services have admitted that these children receive unpasteurized milk!

Naturally, considerable public discussion and criticism of the measure took place, but this has really been of value as it has permitted invalubale educational work to be done. Most criticism came from small milk dealers, who feared the expense and from certain food faddists. It was pointed out, however, by health authorities that the milk is not harmed as claimed. Its food values are unchanged. There may be slight reduction of the vitamins B1 and B2 but these are more than compensated for anyway by the orange juice, fruits, vegetables, cereals and eggs recommended for the normal diet. The danger of typhoid fever, paratyphoid fever, undulant fever, septic sore throat, dysentery, etc., were stressed. The Committte on Milk Control has analyzed 53 milk-borne epidemics in Canada since 1906. Of these 41 were of typhoid or paratyphoid fevers with 7,134 cases and 684 deaths. Certified milk or milk from tested herds does not necessarily protect from milk-borne diseases.

Most convincing was the testimony of the staff of the Hospital for Sick Children in Toronto. Since 1914, when that city pioneered with a rigid pasteurization regulation, thanks to the courage of the late Dr. Chas. Hastings, not a single case of bone, gland or abdominal tuberculosis has been contracted in that city. All of the many cases treated at that institution came from outside points or, in the case of certain Toronto children, followed a sojourn in the country or elsewhere. Various national and provincial medical organizations have passed strong resolutions urging compulsory pasteurization. In the light of present knowledge no hospital medical staff or board of trustees should permit its patients to receive raw milk, even if it be necessary to install a small pasteruization outfit in the hospital itself.

Local Hospital Councils

Increasing interest is being taken in local Hospital Councils, according to the report of Mrs. A. C. Bachmeyer, Chairman of the Division on Hospital Councils of the American Hospital Association, presented at a recent meeting in New York of the Council of that body. For two years Mrs. Bachmeyer has been studying hospital councils in the United States and Canada, and, at the present time, has records of twenty-five local hospital councils. Five organizations, carrying the name "Council", are not considered as such in the classification adopted by this committee, as such are made up primarily of hospital superintendents and such organizations are now listed as superintendents' conferences. The membership of the various councils differs considerably, but, in general, adequate provision is made for representation of hospital and community interest. Eight councils are affiliated with the local councils of social agencies or health councils. Ten of the councils are studying group hospitalization, and, in five others, the programme has been launched through council effort. Only five councils report any organized programme of educational publicity. In co-operative service, such as uniform administrative procedures, salary schedules, vacations and sick leaves, hospital charges, etc., much seems to have been accomplished.

Reports were submitted also from the various *superintendents' conferences,* such as now operate at Akron, Atlanta, Baltimore, Berkeley, District of Columbia, Pittsburgh, San Francisco, etc. In all, there are some twelve superintendents' conferences. Their activities differ little from those of the majority of hospital councils, although it is of interest to note that, as Mrs. Bachmeyer reports, with such a type of organization definite action cannot be as readily undertaken—an observation to be expected, when the group includes only superintendents, who must defer to their trustees on matters of hospital policies.

Three Canadian hospital councils filed reports: the Montreal Hospital Council, the Edmonton Hospitals Advisory Council, and the Toronto Hospital Council.

"There appears to be general acceptance of the importance of hospital councils in community planning. The relatively small number of councils functioning in the cities of the country is undoubtedly due to the lack of leadership in the hospital and social welfare fields, and also to the lack of any pressure upon the part of community planning groups, necessitating joint action on the part of the hospitals. With the present trend in social welfare programmes, it appears that there will be more and more necessity for hospitals to join together in consideration of policies relating to their particular fields of activity. The Division on Hospital Councils should be prepared to lend assistance to communities in the way of supplying information of the experiences of already established councils and in any other ways which may be suggested. The contribution, which regional associations may make in promoting the movement for the organization of hospital councils, cannot be over-estimated. Community chest and councils of social agencies may be interested in lending their assistance in promoting the movement."

Among the recommendations of this Division was one to the effect that "state associations be urged to foster the hospital council movement by organizing committees on hospital councils, arranging for speakers on the subject at their meetings, and in other appropriate ways."

Educational Films

ENQUIRIES are made at frequent intervals concerning the availability of educational films in Canada. In an effort to ascertain the extent to which films are available, the Department of Hospital Service of the Canadian Medical Association has made enquiry from various sources and a summary of the information received may be obtained upon application.

It would appear that some of the voluntary health and other associations in Canada have a number of films available; for instance, such may be obtained from the Canadian Tuberculosis Association, the Health League of Canada, and the Ontario Safety League. Certain commercial organizations in Canada have films on various subjects. These firms include: Mead Johnson and Company, of Belleville; the Metropolitan Life Insurance Co., Ottawa; and the Winthrop Chemical Co., of Montreal. The Department of Agriculture at Ottawa has certain films on milk. The Province of British Columbia has a film on Venereal Disease, and one on Tuberculosis. The Saskatchewan Provincial Government has a film on Cancer, and the Anti-Tuberculosis League one on Sanatorium Care. Quebec has a number of films. The Eastman Kodak Company has a number of films that may be purchased, and the Associated Screen News, Ltd., Toronto, has health films for rent.

In addition, there are available a great many films of United States origin. These are issued by the American society for the Control of Cancer; the Rockefeller Foundation; the American College of Surgeons (35 mm. "Good Hospital Care", with sound, available through the Department of Hospital Service of the Canadian Medical Association); the British Film Institute, 4 Great Russell St., London; American Dental Association; American Social Hygiene Association, and a number of commercial houses, such as, Eli Lilly Company; Belgard & Spero; Libby McNeil and Libby, and other organizations. Catalogues of films are issued by the American College of Surgeons, and by the Bell & Howell Company, of Chicago. Most of these films are 16 mm. and silent, although some are with sound, and a number are available in 35 mm. size.

The problem of duty, when films are imported from the United States, has not been satisfactorily settled, as yet. Item 696a was inserted in the Canadian Tariff to implement the provisions of an International Convention signed at Geneva by a great many countries of the world, with a view to facilitating the international circulation of films of an educational character. This item provides free entry, when the films are accompanied by a certificate of the government or an official of the government, recognized for that purpose, of the country in which the film is produced as to its educational character. Unfortunately, so far, the United States, which is the source of a large number of desirable educational films, although a signatory to the International Convention, has not yet set up machinery to certify films to be exported from that country. Until such time as the United States takes this necessary step, American films cannot be imported into Canada free of duty. England and other countries of the British Empire have set up this machinery. Except when permitted, under Item 696a, 16 mm. positive moving-picture films come in under Item 463, which is free under the British Preference schedule, 20% under the Most Favoured Nations and Intermediate schedules, and 25% under the General schedule and the French Treaty. In addition, there would be the usual Excise taxes, and the Sales Tax unless brought in by a public hospital. It is understood that rebates of the duty may be arranged upon the return of the films. In view of the importation difficulties, the use of films, which must be imported directly from the United States, cannot be recommended until such time as the entry of such films under Item 696a can be arranged.

HEALTH STAMPS

Apart from the Red Cross issues of postage stamps, which appeared in many countries following the Great War, we find a number of special issues in stamp collections called "Health Stamps." These special issues not only draw public attention to the importance of health, but also provide a means for public subscription in small amounts for the support of health institutions.

A special set of ten stamps was issued in Latvia in 1930 to aid in raising funds for the fight against tuberculosis. These stamps were used for the prepayment of postage, as shown by the lower of the two values, and double this amount is printed on the right-hand side, this being contributed for the aid of the sick. In this way the Post-office authorities assist the workers who are building and supporting institutions for the care and healing of the sick.

New Zealand's Health Stamps

Our sister Dominion, under the "Southern Cross", has found the use of "Health Stamps" profitable, both for publicity and for raising funds. Each year since 1929 a special stamp has been issued and apparently on sale for the entire year.

This stamp sells for two pence (or four cents), one penny being for "postage", and the other penny being for "health" funds.

The entire series makes a very interesting set, the designs being varied and quite attractive.

"Health Stamps" constitute a new group for specialists, making a special appeal to physicians and social service workers.

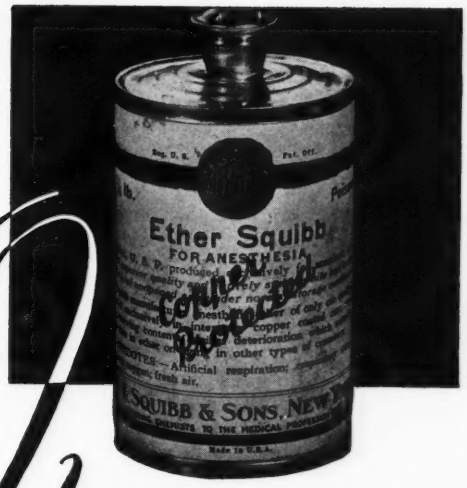
Canadian Health Stamps

We believe that the Canadian public would welcome the opportunity to support our sanitarium workers if Health Stamps were issued in Canada.

Such a stamp should sell for five cents, three cents of which would be for "postage", and two cents for "health." There would be no confusion about the use of the stamp as a five-cent stamp, because one corner would show the numeral "3c" and "postage", and the other corner "2c" and "health".—*The Stamp Club, Globe and Mail.*

Fire in Hospital Extinguished before Patients Aware of its Existence

Fire broke out at the Trail-Tadanac Hospital, B.C., recently, but firemen, though momentarily delayed by a collision, arrived in time to extinguish the blaze without alarm to the patients. The blaze of undetermined origin, broke out on the roof.



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SQUIBB ETHER

Analysis of Hospital Facilities in Canada

THE most familiar of all public institutions established to administer and foster the general health of the community is the general public hospital common to all cities and towns and prosperous rural communities. Where public hospitals cannot be maintained in remote districts, private hospitals and maternity homes and Red Cross out-post hospitals or rural clinics in charge of district nurses are established. These services are further supplemented by the work of the Victorian Order of Nurses, a national visiting nursing association with 90 branches in Canada. In 1936 the Victorian Order of Nurses paid 727,400 visits to 82,021 cases, of which 12,309 were obstetrical cases.

There were in operation in Canada in 1936, 900 hospitals for the sick, of which 609 were public, 259 private, and 32 Dominion. Public and private hospitals reported a total of 56,424 set up beds and cribs, 70.5 p.c. of which were occupied during the year. The total personnel of all public and private hospitals was 38,293. During the year 1936, 779,697 adults and children received a total of 14,574,180 days' care, an average stay of 18.6 days; there were 81,730 new born infants under care for 1,024,415 days, an average stay of 12.5 days. Forty-one hospitals with organized outpatient departments reported 212,377 patients receiving 767,730 treatments; 11 reported treating 107,397 patients but did not report treatment; and 18 reported only treatments (861,388) given.

Second to general hospitals are the institutions for persons suffering from mental diseases. The public hospitals for the insane, feeble-minded and epileptic are assisted in their care of indigent patients by provincial and municipal grants. In addition there are county and municipal insti-

Numbers and Bed Capacities of Hospitals and Charitable Institutions in Canada, by Provinces, 1936

Type of Institution		P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Population ('000's omitted)		92	537	435	3,096	3,690	711	931	772	750	11,028
Hospitals											
Public Hospitals											
General	No.	4	23	16	52	110	33	74	76	68	463[1]
	Beds	220	1,469	1,240	8,944	11,279	2,512	3,161	3,560	4,639	37,222[1]
Women's (only)	No.	—	2	1	5	4	—	3	2	1	18
	Beds	—	64	20	805	313	—	104	125	55	1,486
Paediatric	No.	—	1	—	3	2	1	1	1	2	11
	Beds	—	80	—	446	475	125	28	38	100	1,292
Isolation	No.	—	1	—	4	7	2	1	3	—	18
	Beds	—	54	—	774	675	315	6	99	—	1,893
Convalescent	No.	—	—	—	3	1	1	—	—	—	5
	Beds	—	—	—	259	35	50	—	—	—	344
Tuberculosis	No.	1	2	3	8	13	4	3	1	1	36
	Beds	60	359	410	1,313	3,254	712	723	215	332	7,378
Red Cross	No.	—	—	—	—	27	—	6	—	1	34
	Beds	—	—	—	—	311	—	64	—	4	379
Incurable	No.	—	—	1	1	7	1	2	5	1	18
	Beds	—	—	33	574	1,028	330	165	233	170	2,533
Other	No.	—	—	—	5	1	—	—	—	—	6
	Beds	—	—	—	1,012	25	—	—	—	—	1,037
Totals, Public	No.	5	29	21	81	172	42	90	88	74	609[1]
	Beds	280	2,026	1,703	14,097	17,395	4,044	4,251	4,270	5,300	53,564[1]
Private Hospitals	No.	—	4	7	33	68	7	63	50	27	259
	Beds	—	255	96	692	845	69	339	240	324	2,860
Dominion Hospitals	No.	—	4	3	5	7	3	1	5	4	32
	Beds	—	398	152	414	809	304	56	234	267	2,634
Mental Hospitals	No.	1	16	1	9	16	4	2	4	4	57
	Beds	275	2,126	1,025	11,469	13,050	2,272	2,600	2,092	2,455	37,364
Totals, All Hospitals	No.	6	53	32	128	263	56	156	147	109	957[1]
	Beds	555	4,805	2,976	26,672	32,099	6,689	7,246	6,836	8,346	96,422[1]
Charitable and Benevolent Institutions	No.	6	48	28	126	173	30	10	12	21	454[2]
	Beds	411	2,897	1,715	19,896	10,585	1,570	430	431	1,136	39,071[2]

(1) Includes 7 hospitals in Yukon and N.W.T. with 198 beds, but does not include 3 hospitals in Que., 1 in Man., and 3 in Yukon and N.W.T. which did not report. (2) Does not include 5 institutions which did not report.

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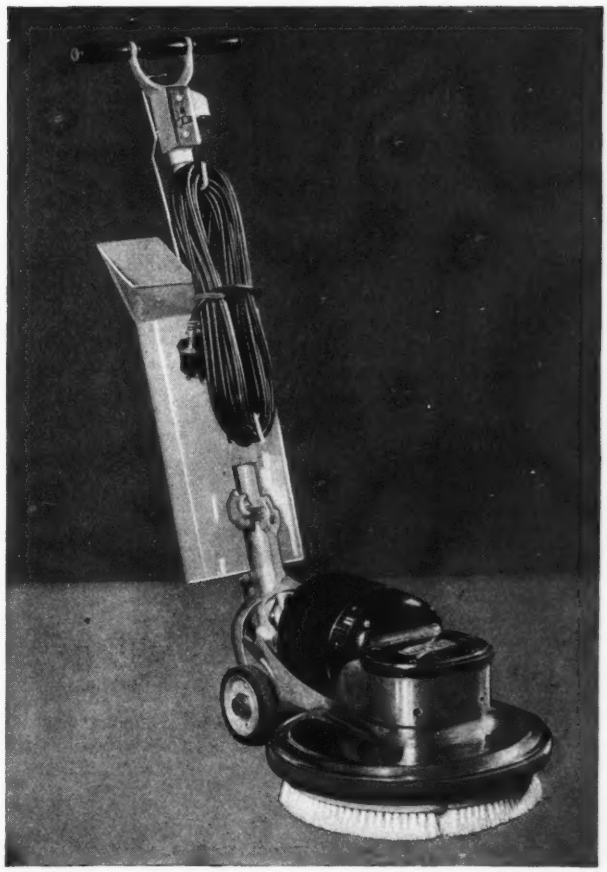

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tutions, psychopathic hospitals and a few Dominion and private institutions. The 57 mental hospitals have a normal capacity of 37,364 beds. On Dec. 31, 1936, these institutions reported 39,833 inmates. The total receipts for 1935, including government grants and fees from patients, were $10,940,797 and the total expenditures $9,206,970.

Homes or hospitals for incurables provide maintenance, nursing, medical and surgical aid to persons suffering from chronic and incurable diseases and the nature of the services given is such as to call for special reference. any hospitals for incurable care not only for those suffering from incurable diseases but also for the aged, indigent, feeble-minded and epileptic. There are 18 of these institutions in operation. The average number of patients per day during 1936 was 2,230, the bed capacity 2,533, and the total number under treatment 3,427.

The number of charitable and benevolent institutions in Canada on June 1, 1936, was 459 (454 reported). Of the 459 institutions, 137 were for adults, 88 for adults and children, 118 were orphanages, 95 were children's aid societies, 6 juvenile immigration societies and 15 day nurseries. These institutions had under care on this date 14,681 adults and 33,413 children. The expenditures in connection with these institutions totalled $9,224,205 and receipts amounted to $8,860,547. The total number in care during the year 1935 was 65,899.

"Canada, 1938"—issued by the Dominion Bureau of Statistics, Ottawa.

Grants for Poor Sick Increased in British Columbia

According to the government estimates, costs of maintaining the poor and sick of British Columbia are mounting. For this purpose the government will spend $180,000 next year instead of $130,000 voted for this year. Total administration of health and welfare services will advance from $66,950 to $78,140. Statutory grants to hospitals will rise from $775,000 to $960,000.

Provision is being made to continue Hon. G. M. Weir's war on tuberculosis and venereal disease. Altogether tuberculosis control will cost the province $575,432 as against $509,062 this year. On the cure and prevention of venereal disease, the government will spend $827,000 as against $715,318 this year.

It is also reported that there is an increase in mother's pensions of $80,000 and an increase of $141,036 in the cost of mental hospitals.

The 1937 Hospitals Year Book

The Secretarial Office has received its copy of "The Hospitals Year-Book" for 1937, issued under the auspices of the Joint Council of the Order of Saint John and the British Red Cross Society, and the British Hospitals Association. The Year-Book is an exceedingly valuable collection of data and studies relating to various activities in the hospital field in Great Britain, collected under the editorship of Mr. R. H. P. Orde of the Central Bureau of Hospital Information. There is a full list of new buildings of extensions to voluntary hospitals during the previous year, with description of the buildings, cost, and the cost of equipment. There is also a very valuable directory of the different types of hospitals in Great Britain, a list of various societies and examining bodies, and a summary of the work and finances of voluntary hospitals. The summaries of many questionnaires sent out to hospitals on divers subjects are included in this volume. While of most value to the hospital workers in Great Britain, it contains much information of interest to workers in this country.

Ontario to Assume Greater Responsibility

One of the measures being sponsored by the Department of Health of Ontario in the present session of the legislature provides relief for the municipalities in the upkeep of their tubercuosis patients. At present the municipalities and the provincial government jointly contribute to the upkeep of the indigent tuberculosis patients. However, the government program has been hampered by the reluctance of municipalities to send active cases into sanatoria. Of 1,200 patients dying in 1936, only 640 or 53 per cent had received sanatorium care.

To ensure prompt hospitalization the government propose to assume the cost of sanatorium treatment previously borne by the municipality, and also to provide free sanatorium treatment for those persons, who, while not actually indigent, could not hope to pay the costs of hospital care for any length of time. Provision has been made in the estimates for an additional expenditure of $1,000,000 to meet this need. The present burden of many of the municipaities is quite high. Toronto pays approximately $390,000, Hamilton pays $90,000, London pays about $35,000 and other municipalities in proportion. Last year the municipalities of this province paid altogether some $1,300,000 for this item alone.

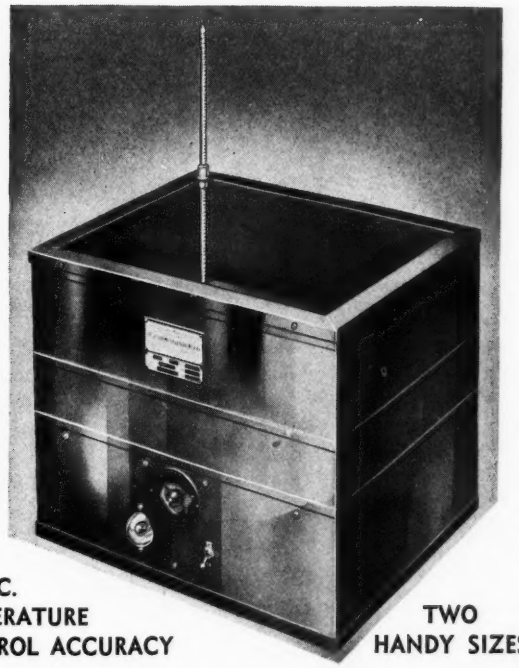
Publicity Officer Appointed

Information has been received that the Royal Melbourne Hospital at Melbourne, Australia, of which Mr. R. E. Fanning, known to a number of Canadian administrators, has recently appointed a Publicity Officer whose duties are:

(a) To see that Hospital affairs are kept before the public and in a favourable light.
(b) To interest individuals or Trustee Companies, etc., in this Hospital, and to suggest to them that the Hospital is a worthy legatee.
(c) To work in with the Hospital Auxiliary in devising ways of raising money by voluntary subscription.
(d) To conduct any special appeals which may be authorized from time to time.
(e) With regard to the building of the new hospital, to conduct the Publicity Campaign visualized for the dual purpose of educating the public to be hospital-minded, and of raising as much money as is possible by voluntary contribution.

This is a distinctly forward step, and is one which is in keeping with the present trend in hospital administration to keep the public more fully informed of hospital matters.

NEW SEROLOGICAL BATHS AID IN FIGHT AGAINST Syphillis



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	DESCRIPTION	CAT. NO.	PRICE
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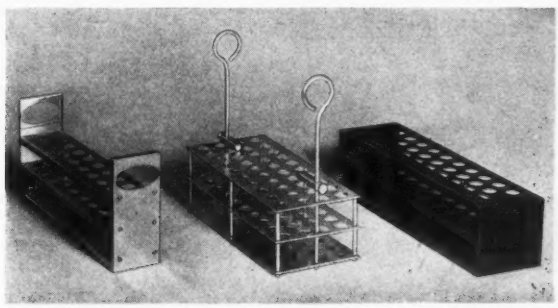
	Bath with one Adjustable Rack*	6645	62.50
	Cover only for SMALL baths 6644-45	6646	7.90
LARGE Working Chamber 10½ x 13⅛ x 5 in. deep. Overall Size 15¼ x 12⅛ x 12¾ in. high. 500 WATTS	Bath with four Army Medical Racks	6649	$78.75
	Bath with six Army Medical Racks	6650	84.00
	Bath with two Adjustable Racks*	6651	77.70
	Bath with three Adjustable Racks*	6652	82.40
	Bath with three Kahn Racks	6653	74.55
	Cover only for LARGE baths 6649-53	6654	15.75

*If bath includes ADJUSTABLE RACKS, be sure to specify which are wanted as indicated by Nos. 9510-16.



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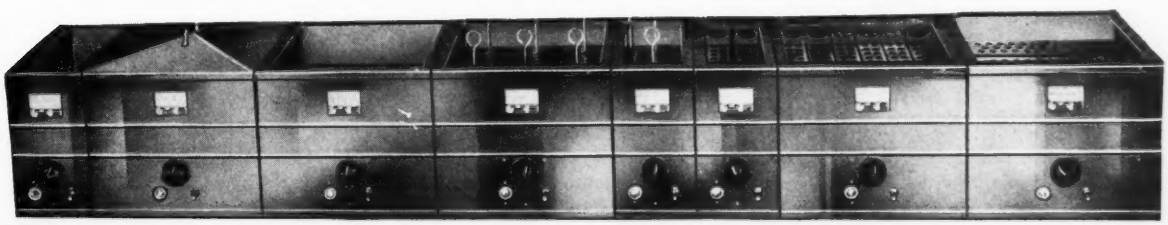

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Address on Poisons and Foods

(Continued from page 15)

ernments also limit the solvents of flavouring agents; they limit the alcoholic content of fruit juices and the amount of sugar in apple juice. They define the minimum citric acid content of lemon, lime and lime fruits. Even spices, tea, vinegar, sugar and related substances are defined. It it, therefore, of interest to note some of the regualtions with respect to lead, arsenic and other poisons.

Lead. Lead is a poison. There is perhaps no other condition which can have such devastating effects upon the cardio-vascular-renal system as chronic lead poisoning. What, therefore, is known of the lead contents of the foods and fluids we eat and drink?

Unlike other metals (copper, zinc, etc.) lead is not a natural constituent of the human body. In a recent investigation of Eskimos in the Canadian Eastern Arctic (20) we were unable to find any lead whatever in the urines of these natives, though the method employed (spectrographic) was sufficiently sensitive to detect as little as 0.0000005 grams per cubic centimetre. Lead is now, however, so commonly found in the urines of civilized peoples that no attention is paid to it when the amount does not exceed 0.1 milligrams per litre. The source of this lead is obviously the foods which we eat and drink. Whether these small amounts when present in the body over long periods of time are harmful is not known, but it may be expected that, in time, these "normal" values will be exceeded since, as stated, Governments in general, do not prohibit—they merely limit—the addition of this poison to a variety of food materials. I am referring to the fruit and vegetable sprays. Furthermore, in spite of all regulations and in spite of the fact that these sprays may be very effectively removed from these foods with such a simple agent as a one per cent solution of hydrochloric acid, the amounts found have repeatedly exceeded the limits allowed. In Canada and in the United States, for example, the maximum amount of residue permitted is about 2.5 parts per million, that is, about 0.018 grains of lead per pound. In 1937, however, analysis of five different lots of apples showed amounts which ranged between 0.024 and 0.027 grains per pound (21). Analysis of cabbage showed as much as 1.24 grains per pound (22). As recently as January of this year, poisonous amounts of lead were discovered in two examinations of pears (N.J.F.D. 27411 and 27413) and in one examination of cabbage (N.J.F.D. 27420). Practically the same experiences have been met with in the use of arsenic.

Arsenic. Excluding suicide and homicide, arsenic was at one time regarded as a freakish form of food poisoning. The outbreak in the latter part of 1900 in England is an example. Glucose was then used in manufacture of beer. The glucose in this instance was prepared with sulphuric acid, but the manufacturers of the acid did not know the purposes for which it was intended. It was, therefore, made with materials which contained large amounts of arsenic. The arsenic thus found its way from the acid to the glucose and from the glucose to the beer and it was estimated that there were over 6,000 cases of poisoning. Like lead, however, arsenic has also become a "normal" constituent of human urine and, again, one of the causes is the use of sprays on fruits and vegetables. As in the

case of lead, governments limit the amount of arsenic which may remain on these foods. This limit is approximately, 1/100 grain per pound, that is, about 1.4 parts of arsenic per million parts of food. In 1937, however, there was a report of a case of a person who developed acute arsenical poisoning after having eaten three apples from a sprayed orchard (21). In a later investigation, analyses of cabbage showed amounts of arsenic which ranged between 0.02 and 0.45 grains per pound (22). Similar degrees of contamination were also found in fresh apples, apple pomace and cauliflower. It should be noted here that the minimum lethal dose of arsenic is about two grains. Large quantities of arsenic in such food materials were, however, found as recently as January of this year (N.J. F.D. 27411, 27413, 27420).

An inconsistency with respect to the regulations of the arsenical contents of food materials may be seen from the following:

Because of their natural occurrence, small amounts of arsenic are unavoidable in a number of materials used in the preparation of foods—baking soda, cream of tartar, etc. Authorities, therefore, recognizing the possible harmful effects of arsenic set definite limits with respect to the amounts which may find their way into foods because of the use of these materials. The arsenic content of baking powder, for example, is generally limited to about one to two parts per million. Therefore, since about two teaspoonfuls of baking powder are used as a rule with a cup of flour, the total amount of arsenic which would be consumed, even if a person ate all of the food made with the pound of flour, would be no more than about 1/1000 of a grain. Nevertheless, the permissible amount in fruits and vegetables is about 1/100 of a grain per pound and, as stated, in spite of the preventive meausres, more may be, and has been, found from time to time.

Food Preservatives. Food preservatives are another source of harmful materials. Such preservatives as formaldehyde and betanaphthol are now generally forbidden and, as a rule, no preservatives whatever are permitted in milk. Benzoic acid and its salts are, however, still permitted and, aside from their possible harmful effects, one of the objections to their presence is that it encourages use of partly decomposed raw products in foods and unsanitary methods during their preparation. Benzoic acid, for example, is used to a very large extent in ketchup and sauces. It may be stated definitely that this acid and its salts are not necessary in these foods when good raw products are used and the methods of manufacture are hygienic. It is also not necessary to use colouring agents. This is admitted by some of the better manufacturers of these food materials. For example, on the label of one of the bottles of sauces, which I have here before me, there is this statement: "The food in this package is guaranteed to be pure, free from artificial preservatives and colour.' On the label of one of the bottles of ketchup there is this statement "Guaranteed absolutely pure. Contains no artificial preservatives or colouring agent."

A variety of other materials are permitted— sulphurous acid in beverages and fruit; zinc in eggs and sodium nitrate in cured meats, are examples. Here also the amounts are small. A variety of colouring agents are permitted in food materials other than such materials as chlorophyl, caramel and other vegetable colouring extractives which

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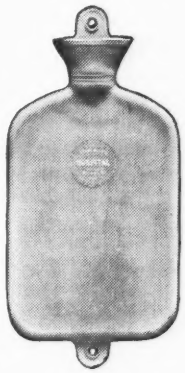

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are definitely known to be harmless. This variety includes coal tar dyes. Here also the amounts permitted are small and it is these amounts which make interpretation of their significance difficult. There is no doubt that if the question was put to a group of pharmacologists as to whether 1/100 of a grain of arsenic is harmful the answer would be definitely No, since larger amounts are used in the treatment of disease, though admittedly for short periods of time. It is equally doubtful whether 1/50 of a grain of lead, 1/10 of a grain of zinc, a grain of sodium nitrite, a few grains of benzoic acid or its salts, a few grains of sulphurous acid or the small amounts of coal tar dyes allowed are harmful. My impression is that, though none of these materials by itself may be harmful in the amounts permitted, inclusion of a number of them in the daily menu for long periods of time is harmful. There is no doubt that the majority are harmful when taken in large amounts during short periods of time and it seems reasonable that the same conditions, but in a milder form, may be produced by smaller amounts over long periods of time unless the kidneys excrete these materials as rapidly as they appear in the body and, of many of them, this is very much in doubt. Benzoic acid, for example, has a low toxicity due probably to its being transformed to hippuric acid by union with glycocoll. The probability, therefore, is that it is harmless in normal people. I believe, however, that its use over long periods of time is harmful in people with inflammatory conditions of the gastro-intestinal tract or diseased kidneys. The free acid, it should be noted, is distinctly irritant in as low a concentration as 0.1 per cent. Sollmann in his work on Pharmacology (23) advised against its use by people with gastro-intestinal or renal disease. Recently, we had three cases of skin lesions which have resulted from constant handling of oranges and lemons which had been painted with coal tar dyes. In two of these cases, there was definite vesicle formation on the palmar surfaces of the tips of the fingers. These, it should be pointed out, are exceptional cases and the probability is that ingestion of these dyes even in the amounts possible in marmalade made from such skins is not harmful. The probability is that they are destroyed by the juices of the stomach and intestines. This, however, is not definitely known. Also, as with the use of benzoic acid in sauces and ketchup, the masking of the natural colour of the fruit encourages sale of unripe or damaged materials. The Food and Drugs Acts regulate the degree of maturity of these fruits by defining their sugar and citric acid contents. They, however, also regulate the limits of lead and arsenic in food materials and, as we have seen, these regulations do not entirely prevent periodic occurrence of amounts in excess of the limits allowed.

There is one encouraging feature about the permission to use such materials in foods. Rapid advances are being made in laboratory methods of diagnosis. Many of these materials which would escape detection by the usual chemical methods because of their limits of sensitivity may now be readily detected with the aid of the spectograph. Intensive use of this apparatus and careful correlation of clinical signs with laboratory findings may in the near future reveal causes of disease—particularly cardio-vascular-renal disturbances—hitherto unrecognized and it should be noted that Public Health Authorities recognize this possibility. Thus, though there may be no definite proof that some of these food adulterants are harmful in the amounts allowed, practically all Food and Drugs Acts imply that they may be and that it may, therefore, be necessary to discontinue their use. Thus, in the Food and Drugs Act of Canada there is the following statement under the Section on preservatives:

" . . . toleration of their use is dependent upon the fact that available evidence concerning their physiological action is not considered sufficient to prove that, under the prescribed regulations, they are harmful to health in such degree as to bring them under Section 4 (f) of the Food and Drugs Act, which read as follows:

"Food shall be deemed to be adulterated within the meaning of this Act, if it contains any added poisonous ingredient, or any ingredient which may render it injurious to the heath of the person consuming it, whether added with intent or otherwise."

"Should satisfactory evidence of the harmfulness to health of any of the preservatives named in Class II be forthcoming, such preservatives would immediately fall under the condemnation of the Food and Drugs Act, and foods containing such preservatives would be declared to be adulterated." This is a very wise precaution.

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Delivered before the Montreal Dietetic Association, Montreal, Que., February 21st, 1938.

Homewood Sanitarium Facing Enquiry

An enquiry into the management of affairs of the Homewood Sanitarium at Guelph, Ontario, has been ordered by the Ontario Government. This hospital is a well-known private institution catering to nervous and mental diseases. The investigation is being held as a result of the complaints of two citizens from other provinces, alleging in the one case improper committal and detention, and in the other case retention beyond the maximum period prescribed by a magistrate.

Dr. Cragg Superintendent St. Lawrence Sanatorium

Dr. George W. Cragg has been appointed superintendent of the St. Lawrence Tuberculosis Sanatorium to succeed Dr. A. D. Lapp. Dr. Cragg has had post graduate experience in St. Michael's Hospital, Toronto, in London, England, and at the Mountain Sanatorium, Hamilton. He was for a time physician to the chest clinic at St. Michael's Hospital and, in 1936, joined the Department of Health for Ontario as clinician to the travelling chest clinic and as inspector of sanatoria.

Miss Alma M. Saxton, graduate of the Connaught Training School for Nurses at Weston has been appointed superintendent of nurses, succeeding Miss Alma Barter. Her new assistant is Miss B. B. Eastman, a graduate of the Sarnia General Hospital, who will also continue her former duties as X-ray and laboratory technician.

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News of Hospitals and Staffs

City Grant to Vancouver General Hospital Cut Off

The special civic budget committee has notified the Vancouver General Hospital that it will be unable to continue the special annual $100,000 grant this year. The city will pay the $788,000 required for per capita charges but cannot go farther. This decision has been strongly protested by the hospital officials, who fear that this action will force them to reduce the service given to the city's indigents.

Doctor R. C. Riley Pathologist in Calgary

The Holy Cross Hospital at Calgary, Alberta, has appointed Doctor Robert C. Riley to the position of pathologist. Doctor Riley was formerly pathologist to the Regina General Hospital and St. Joseph's Hospital, Hamilton.

Nova Scotia Sanatorium Opens Additional Infirmary

The entire building has been reconditioned, and a diet kitchen added to make greater convenience in the care of the inmates. With the new annex, there is now a total of 287 infirmary and semi-infirmary beds, and 32 pavilion beds, making a total accommodation for 319 patients.

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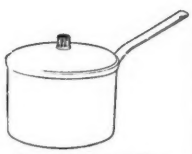

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Potato Pot.

"Wear-Ever" Aluminum Cooking Utensils are equipped with attractive black fittings and harmonize with any kitchen color scheme.

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Canmore Hospital, Alberta, Opened

A $20,000 structure, made possible by the co-operation of the Canmore Coal Company and the community, both sharing the cost, was opened recently.

Doctor Stalker Officially Opens New South Porcupine Hospital

Doctor M. E. J. Stalker, Medical Inspector of Hospitals, Ontario Department of Health, officially opened the South Porcupine General Hospital recently, which has been built through popular subscription by the residents of the Porcupine Camp and by large grants from the mining companies of Tisdale Township.

Miss Morgan is to be the matron of this fine institution, which was designed by D. R. Franklin, Architect.

Hotel Dieu de Quebec Tri-Centenary Celebration

Preparations are being made for the widespread celebration of the tri-centenary of Quebec's Hotel Dieu in August next, with a colourful bazaar for the benefit of the poor as a feature item.

I.O.D.E. Presents $5,000 Bronchoscopic Room to Vancouver General Hospital

In commemoration of the Coronation of Their Majesties King George VI and Queen Elizabeth, the Imperial Order of the Daughters of the Empire, Municipal Chapter, have presented a new $5,000 Bronchoscopic Room to the Vancouver General Hospital.

New Officers Installed

Major Helena White has been appointed matron of the Salvation Army Bethany Hospital, Saskatoon. She will be assisted by Adjutant (Nurse) Jones and Captain A. Oselle in the management of the hospital.

$10,000 Bequest to St. Mary's Hospital, Montreal

Mrs. D. J. Coulson, who died recently, bequeathed $10,000 to St. Mary's Hospital, Montreal, of which she was a life governor.

Hull Sanatorium Officially Opened

The $250,000 Hull Sanatorium was officially opened recently. Prior to its construction, persons from Western Quebec were obliged to go to Quebec for treatment. Rev. Sister Ste Helene is the Superior.

John C. Newman Successor to Lt.-Col. H. Molson as President of the Montreal General Hospital

John C. Newman, prominent Montreal business man, was recently elected president of the Montreal General Hospital, in succession to Lt.-Col. Herbert Molson, C. M.G., M.D., whose recent death terminated 15 years' active service as head of the institution.

New Waterford Hospital, N.S., Appoints Miss MacGillivray Superintendent

Miss Evelyn MacGillivray has been appointed Superintendent of the New Waterford General Hospital, N.S., of which she is a graduate.

Salmon Arm Nurses' Home Now Completed

The new $7,000 Nurses' Home at the Salmon Arm General Hospital is now completed. Construction of this modern home was made possible through the successful working of the Hospital Insurance Scheme now in operation there.

$60,000 Lac La Biche Hotel, Alberta, to become New Hospital

Built as a tourist attraction before the war by the A. & G. W. Railway at a cost of $60,000, the Lac La Biche Hotel has been purchased by a Roman Catholic sisterhood, Les Filles de Jesu. A modern new hospital will be opened in the palatial building on the shore of Lac La Biche as soon as renovations and installations of new equipment are completed. The new hospital will serve a wide area.

Training School Discontinued

The Board of Managers of the Pembroke Cottage Hospital (Ontario) have decided to discontinue the nurses' training school and operate the institution with a staff of graduate nurses.

Title "Hospital" to be Restricted

The Ontario Legislature is proposing to amend the Private Hospitals' Act to prohibit the use of the word "Hospital" by any institution not approved by the Provincial Department of Health. This would affect rest homes and other institutions not licensed as private hospitals by the government.

Leonard P. Goudy New Superintendent Saskatoon City Hospital

Mr. Leonard P. Goudy has been appointed Acting Superintendent of the Saskatoon City Hospital to fill the vacancy due to the resignation of Mr. Leonard Shaw. Mr. Goudy has had considerable experience in hospital work. A pharmacist by training, Mr. Goudy has been purchasing agent and assistant superintendent of the hospital for several years, and is thoroughly conversant with the many problems of this institution and its district. Mr. Goudy has been President of the Saskatchewan Hospital Association, in the work of which he has taken a very active interest for several years.

Catholic Hospital Association to Meet in Buffalo

The Catholic Hospital Association of the United States and Canada will hold its twenty-third Annual Convention at the 174th Regiment Armory, Buffalo, New York, June 13th to 17th, 1938.

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Ontario Hospital Association News

THE decision of the Ontario Government to take full responsibility for the payment of all statutory rates of all indigent patients in the Sanatoria for Tuberculosis throughout the Province, is one which should commend itself to all who have given the matter any study. Under past conditions, many small municipalities have been burdened by the rates which they have been obliged to pay over long periods and what has been much worse, is that many of these who should have been in Sanatoria have not been sent in because of the added burden to their own municipality. The real tragedy of such a condition is that not only do such patients, in many instances, not get the best treatment and chance of recovery, but the possibility of spreading the disease to others is greatly increased.

The Province of Saskatchewan has led the way in Canada in attempting to wipe out this scourge, but we are sure that Ontario is on a fair way to take long forward steps in the same direction.

We would like to add that in the best interests of all those needing hospitalization in Ontario, it would be a fine thing if the Provincial Government could see its way clear to take similar action.

* * *

A letter received from the Minister of Health informs the Hospital Association that some of our problems such as residency, patients from unorganized districts and floaters are to have the early attention of the Government and that in connection with our other requests, the Government intends making investigation of costs in the hospitals of the Province and they ask the co-operation of the hospitals in this study.

We have written the Minister stating that we are sure the hospitals will make every effort possible to supply all necessary information.

May I suggest that the hospitals start immediately to compute and analyse costs of the care of public ward patients as well as unit costs of all special services supplied patients. Some of the larger institutions in Ontario have already done this but we feel that every hospital should do it if possible. It is bound to help our cause if this can be done promptly. We believe the Government of the day is willing to offer all the help possible to the hospitals if we can show that costs warrant them doing much more than is now being done.

* * *

May we draw the attention of all Hospital Superintendents to the circular letter of January 28th, from the Deputy Minister of Health, pointing out the poisonous nature of phosgene gas, which is produced by carbon Tetrachloride, when the latter comes in contact with flame.

Carbon Tetrachloride is commonly used as an agent to extinguish fires and is very valuable for that purpose, but it must be used with great discretion so that phosgene gas may not be created in the room where patients are. Hospital attendants would do well also to keep in mind the nature of this gas.

—F. W. Routley, M.D.

* * *

WOMEN'S HOSPITAL AIDS ASSOCIATION

Province of Ontario, Canada

Association formed 1910 Individual Aid formed 1865

From recent reports received, affiliated groups record the following outstanding activities.

Cochrane Women's Hospital Auxiliary, in addition to the yearly supply of linens and chairs, have purchased a radio for the men's ward, a bookcase for the superintendent's office containing supplementary reading matter, a microscope centrifuge unit equipped with lamp. There are twenty-six active members in this group.

London Victoria Women's Hospital Aid recently donated two hundred and fifty dollars toward the iron lung, which was installed in the hospital and five hundred dollars for individual bed curtains for the Women's public ward, furnished one bedroom and one sunroom, purchased a General Electric Sweeper, a bath for the maids' room, donated fifty dollars to flood relief fund, purchased complete outfit for indigent patient, besides supplying many needs to indigent patients. There are two hundred and eighteen members in this group.

Many of the Hospital Aid groups during the past months have been busy, engaged in sewing groups, making binders, tray cloths, bed pan covers, hot water bag covers, ice-cap covers, pads, pillow covers, sheets, towels, wash cloths, gowns and caps, stockings, bandages of all kinds and sizes and a multitude of other articles, besides mending and salvaging linens.

One Aid is planning to purchase an auxiliary lamp for the delivery room and re-furnishing the nursery. The senior aid of the Memorial Hospital, St. Thomas, entertained the student nurses recently at a theatre party and afterwards one of the Aid members entertained at her home—transportation was provided by various members of the Aid.

The Auxiliary of the Ottawa General Hospital, made possible three blood transfusions for indigent patients. A splendid library has been provided consisting of two hundred and fifty good books for the use of patients. A wagon for conveying these books to the wards was generously donated by one of the active members. Many knitted articles were made and donated—a nurse's kit was given to a member of the graduating class. Many articles such as shoes, stockings, pyjamas, handkerchiefs were given to indigent patients—also baby clothes. One high mass was chanted at the hospital for all the members, living and dead. A low mass was offered for each member who passed away. Flowers were sent to the sick and letters of sympathy sent to all those who had been bereaved.

—Margaret Rhynas, President.

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(Brit. Med. Journ., Jan. 22nd, 1938, p. 191.)

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Medical Research in Other Countries

RECENTLY, the National Research Council of Canada issued a document summarizing the organization of medical research in countries other than Canada. A study of this summary reveals the remarkable extent to which medical research has been organized in the various leading countries. Gradually government sponsored or aided research organizations have taken over the study of various research problems with very gratifying results.

Great Britain

In Great Britain certain of the national health insurance funds are used for supporting investigations at the Medical Research Council's National Institute for Medical Research and at various hospitals and universities. This body maintains the National Collection of Type Cultures of micro-organisms at the Lister Institute in London, and the Standards Laboratory at Cambridge. Special research departments are wholly or largely maintained at University College Hospital, the National Hospital for Diseases of the Nervous System, and at Guy's Hospital. Their Tropical Medical Research Committee and their Industrial Health Research Board conduct special investigations in these fields. The Council also maintains standards for the biological assay of therapeutic substances manufactured at home or abroad. Travelling fellowships are awarded from time to time. Moreover, grants in aid of research at various universities, hospitals and other centres throughout Great Britain and Northern Ireland are made from time to time.

Cancer research is carried on by two organizations outside the Medical Research Council: The Imperial Cancer Research Fund under the direction of the Royal College of Physicians and Surgeons and the British Empire Cancer Campaign.

South Africa

The Institute in South Africa is maintained by the Government and the Witwatersrand Native Labour Association. Its study covers bacteriology, pathology, industrial hygiene, zoology, biochemistry and entomology.

Australia

The National Health and Medical Research Council was formed in 1936. It is making a special study of cancer.

India

An Indian Institute for Medical Research was formed at Calcutta in 1935. Special attention being given to cholera, oriental sore and nutritional researches.

United States

The National Research Council, organized in 1916, derives its income largely from private sources and from a Carnegie endowment of $5,000,000. It co-operates very fully with various scientific organizations. It has conducted many research studies, and at the present time is engaged in the study of endocrinology, Brucella infection, drug addiction, animal parasitology and sex. Studies have been made of the effect of climate upon health. Over two hundred fellowships in medicine have been granted.

The United States Public Health service has been very active in a wide range of scientific subjects. Much of the scientific work is concentrated in the National Institute of Health at Washington.

Cancer research is conducted by the National Research Institute and the National Cancer Advisory Council.

France

France boasts the oldest National Council for medical research, founded in 1820. It is supported not only by the government but by a large number of benefactors. It maintains permanent committees on various scientific subjects.

Belgium

Has a National Research Council, which has been functioning for ten years. It has some 28 committees of which four deal with medical matters.

Italy

The National Research Council of Italy was founded in 1923. Its committee on medicine is entirely supported by the state. It has done a great deal to stimulate medical research.

Japan

The National Research Committee has but one committee in the division of medical sciences. The Institute for the study of Infectious Diseases in Tokyo is under the Department of Education and the Imperial University.

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Germany

There is no Medical Research Council in Germany or the northern countries. The spirit of research is so widespread in Germany that not only in university centres but in medical institutes supported by industry, municipalities, insurance companies, etc., much investigation has been done.

Czechoslovakia

The Institute of Hygiene is carrying out important studies in connection with vitamins in the diet of the poor.

Union of Soviet Socialist Republics

Although official information is lacking, it would appear that considerable progress has been made in building up the health departments in each of the seven soviets. No branch of the public health service is without a scientific institute to guide its practical work. The Tropical Diseases Institute not only studies these diseases but directs the malaria campaign, and the Smallpox Institute directs the fight against smallpox. The Institute of Experimental Medicine in Leningrad was founded in 1890; newer Institutes are those of Biological Chemistry, Biological Physics, Experimental Biology, Medico-Biology, Experimental Endocrinology, State Nutrition, and Hygiene Culture. The research activities are correlated by a Scientific Council. Medical schools have been greatly increased in number and established even in the most remote districts.

—G. H. A.

Our Birthday

With this issue we celebrate our second birthday, the April issue, 1936, being the first issue of The Canadian Hospital under the editorial direction of the Canadian Hospital Council.

We have had many commendations, and, on the other hand, we know we have deficiencies. We would be grateful if our readers would suggest improvements, and we shall endeavour to overcome our shortcomings with your co-operation.

A couple of our hospital associations have taken a page, and are responsible for the material therein; it is a splendid way of keeping your association members informed, and we feel sure our readers in those provinces turn to their own page first.

Our reading material has been controlled and curtailed by the amount of advertising obtained. At our Executive Meeting in March, it was decided that a major portion of the still very small profits coming to the Canadian Hospital Council from the Journal would be utilized for extra pages of news material and to otherwise build up the Journal. While all hospitals are retained on the mailing list, it would be of tremendous help to the welfare of the Journal if all hospitals could see their way clear to pay the One Dollar subscription rate; your contribution, if you have not paid your subscription, would help in this constructive effort and would be a much appreciated birthday gift.

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Here and There in the Hospital Field

SAINT JOHN, N.B.—Doctor S. R. D. Hewitt, General Superintendent of the Saint John General Hospital has the right idea for the creation of interest in the Annual Report. He points out that the 2" bandages purchased in 1937 would stretch 181½ miles, if laid out in a straight line, and the gauze sponges required would cover a 3" strip 301 miles long. It requires 70 cows in full production to provide the milk, cream and butter used by the hospital; 40 fat steers would be needed for slaughter. A flock of 560 hens would be required to supply the eggs, but 1,600 more would be needed for the table and 1,000 fowl for fricassee, pies and broth. In addition to the 40 steers, there would be needed 150 lambs, 100 calves and 250 hogs. The sausages would extend 2 miles. There would be needed 6 acres to raise the potatoes, and 56 acres to produce the flour. As Doctor Hewitt pointed out, hospitals are the third largest industry on the continent.

* * *

VANCOUVER, B.C.—In connection with the above reference to two miles of sausage, one recalls Doctor Haywood's experience, when giving hospital statistics to a citizens' meeting in Vancouver. He had just told the audience that the Vancouver General used 9 miles of sausages each year, when a sceptical listener at the back of the hall cautioned the speaker "Doctor 'aywood, that's a 'eck of a lot of baloney!"

* * *

BANFF, ALTA.—The Sisters at the Banff Hospital are reported to have adopted twins—a pair of mountain deer. Most hospitals in smaller centers have frequent calls from hungry and transient applicants at the kitchen door, but it is doubtful if any welcome these unadmitted guests as cordially as do the Sisters.

* * *

COBALT, ONT.—There is a possibility that the Cobalt Municipal Hospital may be taken over and operated by the Ontario Red Cross Society. A survey has been made, and this will be considered by the Red Cross Society in the near future. The story of this hospital is of interest to voluntary hospital boards now facing increasing deficits in their own institutions. The hospital at Cobalt was formerly operated as a voluntary body. The deficit finally became so great that the board offered to transfer the institution to the municipality for the sum of one dollar. The municipality hesitated for some time, and finally took over the institution only when it became evident that the voluntary board was prepared to sell the equipment to another institution in a neighboring town and close the hospital.

* * *

NEW YORK, N.Y.—A Committee of New York Hospital Administrators has made considerable progress in planning the Hospital Exhibit at the World's Fair to be held in New York during 1939. It is anticipated that a very interesting display will be developed, and that it will be of such a nature that it will not only prove attractive to the visitors but give them a lasting impression of the beneficent work of hospitals. Mr. Michael Davis and Dr. Claude Munger are active in this work.

* * *

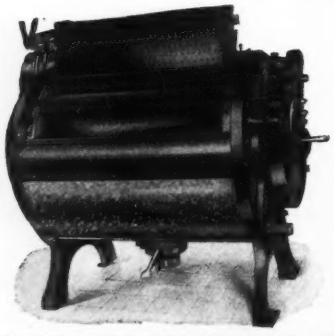
TORONTO, ONT.—The colorful annual Skating Carnival is, indeed, a great inspiration, but, apparently, it was too much so to Mr. Arthur J. Swanson, Superintendent of the Toronto Western Hospital and Chairman of our Publication Committee. Pivoting on one foot, in Sonja Henie fashion, is all right in its proper place, but, when Mr. Swanson put on an involuntary act of his own on the icy pavement at the exit door, the unfortunate result demanded by an inexorable law of gravity was a cauliflower ear and a Colles' fracture. We are pleased to report that he is making an excellent recovery.

* * *

TORONTO, ONT.—The Provincial Government has announced that there will be a province wide investigation of hospital costs and operation. With the increase in hospitalization, particularly of non-pay patients, the municipalities are finding it increasingly difficult to meet their statutory hospital obligations or to pay deficits, and have asked the Provincial Government to assume a larger share of the costs. Hospitals providing extensive diagnostic and therapeutic facilities have suffered because of their comparatively high per diem costs, and it is hoped that this investigation will clarify the reasons for the heavy deficits of certain large urban institutions.

* * *

WINNIPEG, MAN.—The Group Hospitalization Plan drafted by the Central Council of Social Agencies is being submitted to the provincial legislature for approval. It is proposed to establish a Greater Winnipeg Hospital Service Association operating on a non-profit basis, representing the public, the medical profession and the hospitals. Hospitalization only will be covered, with freedom of choice of both physician and hospital.



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Construction

A 50-bed hospital for alcoholics and cases of nervous breakdown, chronic mental diseases and venereal diseases is being considered by the Associated Male Nurses of British Columbia, an organization which, it is anticipated, may change its name to the "Avalon Nursing Society." This hospital, if erected, would probably be built in Vancouver. It is suggested that the hospital would have a staff of a medical man, a matron, two female nurses and a complete staff of male nurses.

* * *

Tenders have been called for the proposed new $100,000 hospital unit at Prince Rupert, B.C. The plans call for a 3-storey "L" shaped structure of fireproof, reinforced concrete.

* * *

It is announced that the next wing at Westminster Hospital, which may be started this year, will cost about $200,000.

* * *

A $275,000 new addition is nearing completion at the Hotel Dieu, Windsor, Ontario, which will provide an extra 100 beds, raising the accommodation of the institution to 215 beds.

* * *

The Montreal Homeopathic Hospital, Montreal, proposes to launch a campaign shortly for approximately $200,000, of which $100,000 would represent the cost of a nurses' home.

* * *

Plans are being prepared for the proposed $25,000 completion of the unfinished wing of the Welland County General Hospital.

* * *

An appeal for the proposed $100,000 Jewish Incurable Hospital to be erected on Sherbrooke Street, east, Montreal, was made at the annual meeting of the Hebrew Consumptive Aid Association. The city has donated land valued at $25,000, and the institution has the sum of $25,000 in hand for the work.

* * *

With a view to enlarging the nurses' residence of the Perley Home for Incurables, Ottawa, the board of governors has purchased three adjoining properties at a combined cost of approximately $22,000.

* * *

Two new outpost hospitals at Hudson Hope in the Peace River area and another at the Banfield cable station, on the west coast of Vancouver Island, will be established by the Canadian Red Cross Society, British Columbia Division.

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Organized Medical Research

The National Research Council has announced the appointment of a committee to study the organization of medical research in Canada.

Sir Frederick Banting, co-discoverer of the insulin treatment for diabetes and director of the Department of Medical Research, University of Toronto, has been named chairman. This action was taken on the recommendation of a nation-wide conference on medical research. Representatives from the provincial governmental health departments, from the federal health department, from the National Research Council, from various medical associations, and from every university in Canada with a medical faculty participated in the conference at Ottawa that resulted in the decision to form the committee.

Four ex-officio officers suggested by the conference and approved by the Council are: Maj.-Gen. A. G. L. McNaughton, Council President; Dr. R. E. Wodehouse, Deputy Minister of Pensions and National Health; Dr. T. H. Leggett, President of the Canadian Medical Association; and Dr. George S. Young, President of the Royal College of Physicians and Surgeons of Canada.

Purposes of the committee are:

1. To receive suggestions for requirements in respect of medical research and in matters related thereto.
2. To consider by whom the investigations required can best be carried out and to make proposals accordingly.
3. To correlate the information obtained and make it available to those concerned.
4. To do such other things as the committee may deem advisable to promote medical research in Canada.

The new committee undertakes its task with the full support and under the direct leadership of the medical profession as a whole in Canada. Results of far-reaching importance are expected in the planning and co-ordination of medical research that will be possible through this new committee.

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Price lists and other information will gladly be supplied on request.

The attractively built four-storey nurses' home of the Hotel Dieu Hospital, Chatham, N.B., has been opened recently.

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Mr. A. H. Allen, Managing Director of the Taylor Instrument Companies of Canada, Limited, on reading the despatch, immediately sent, without charge, one of their Pavaex Passive Vascular Exercisers to St. Joseph's Hospital in that city for the use of the patient.

This apparatus first gained Dominion-wide recognition when it was used in the treatment of Robert Scadding, who was entombed in the Moose Mine collapse in Nova Scotia.

Miss Mabel M. Leggett Superintendent of Groves Memorial Hospital, Fergus, Ontario

The Groves Memorial Hospital, Fergus, Ontario, has appointed Miss Mabel M. Leggett, R.N., Superintendent. She has been granted leave of absence to take a six weeks' course in X-ray work. Alterations in the hospital building and other changes have been proposed to promote efficiency.